



CONTRACT DOCUMENTS

FOR

CITY OF SEDONA

COMMUNITY DEVELOPMENT DEPARTMENT

ENGINEERING SERVICES

**WASTEWATER RECLAMATION PLANT INJECTION WELL NO. 1 &
WELL NO. 2 EQUIPPING PROJECT**

2015-ES-003

City of Sedona
WWRP INJECTION WELL NO. 1 & NO. 2 EQUIPPING DESIGN

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ADVERTISEMENT FOR BIDS

**City of Sedona
Engineering Services
108 Roadrunner Drive
Sedona, AZ 86336**

Sealed bids for the construction of the **WWRP Injection Well No. 1 and Well No. 2 Equipping Project** will be received by the Community Development Department, Engineering Services, located at 108 Roadrunner Drive, Sedona, Arizona, until **2:00 P.M. local time, September 24, 2015.** At that time, bids will be publicly opened and read aloud in the ECHO Conference Room. Bidders are invited, but not required, to be present at the bid opening.

PROJECT: WWRP Injection Well No. 1 and Well No. 2 Equipping Project

DESCRIPTION: Reservoir and wet pit pump station, cartridge filter facility, sodium hypochlorite on-site generation facilities, equipping 2 injection wells, well site facilities, yard piping, electrical and communication facilities, and SCADA programming.

CONTRACT TIME: 300 calendar days after the Notice to Proceed.

LIQUIDATED DAMAGES: \$1,070 per day beyond the 300 calendar day Contract Time.

MANDATORY PRE-BID MEETINGS: Failure to attend and sign attendance sheet at mandatory pre-bid meetings shall render a bid non-responsive.

Copies of the Contract Documents, including plans and specifications for use in preparing bids may be obtained from the Community Development Department, Engineering Services, 108 Roadrunner Drive, Sedona, Arizona (phone 928-204-7111; FAX 928-282-5348). The required deposit per set of plans and specifications is \$100.00, which will be refunded to those listed plan holders not submitting bids, if returned in good and useable condition within seven (7) days after the bid opening. Contract Documents may also be downloaded from the City of Sedona's website at www.SedonaAz.gov under your Business, Doing Business, Bids & RFPs. Downloaded documents may not be returned to the City of Sedona for any deposited refund. If plan documents are downloaded, the City will not be responsible for providing up-to-date information through the website or other communication methods.

PRE-BID CONFERENCE: Pre-bid conference (**mandatory**) will be held on **September 16, 2015, at 2:00 pm. at the Sedona Wastewater Treatment Plant, 7500 W. SR 89A, Sedona AZ** (between mile markers 365 and 366 between Sedona and Cottonwood)

Each bidder's proposal shall be made on forms furnished in the Contract Documents, and must be accompanied by a security consisting of a certified check, cashier's check, or bid bond in an amount of not less than ten percent (10%) of the amount of the total bid amount, and made payable to the CITY OF SEDONA, ARIZONA. In the event the successful Bidder within ten (10) calendar days after award of the Contract fails to enter into a Contract or fails to post payment and performance bonds satisfactory to the City insuring the faithful fulfillment of the Contract as required by law, the security deposit on this bid shall be forfeited to the City.

Contract Documents, with completed Bid Proposal, must be enclosed in a sealed envelope,

addressed to:

HAND DELIVERED: City of Sedona
Community Development Department
Engineering Services
108 Roadrunner Drive
Sedona, AZ 86336

U.S. MAIL: City of Sedona
Community Development Department
Engineering Services
102 Roadrunner Drive
Sedona, AZ 86336

AND MARKED: Bid Proposal for **WWRP Injection Well No. 1 and Well No. 2 Equipping**

AND RECEIVED: **At the Community Development Department, Engineering Services office until 2:00 P.M. local time, September 24, 2015** (as determined by reference to www.time.gov ref [Arizona](#) area)

The successful Bidder will be required to furnish two (2) bonds. One (1) bond, to become effective upon award of the Contract, shall be a Performance Bond substantially in the form attached, and shall be in a sum of one hundred percent (100%) of the contract price including any additions to the Contract. The Bond shall be effective throughout the construction period, including a two (2) year warranty period. The successful Bidder shall also furnish a Labor and Material Payment Bond, substantially in the form attached, to become effective upon award. Said Labor and Material Bond shall be in the amount of one hundred percent (100%) of the Contract price.

The successful Bidder will be determined on the basis of the lowest responsive and responsible Proposal. The City of Sedona, Arizona reserves the right to reject any or all Proposals, to waive or not to waive any informalities, or irregularities in the Proposals received, and to accept a Proposal which in its judgment best serves the interests of the City.

All questions should be directed in writing to Roxanne Holland, Associate Engineer, 102 Roadrunner Drive, Sedona, Arizona 86336, or email RHolland@sedonaaz.gov.

FIRST ADVERTISEMENT: **September 4, 2015**
SECOND ADVERTISEMENT: **September 9, 2015**
RED ROCK NEWS

BY: _____
J. Andy Dickey, PE
Assistant Community Development Director/City Engineer

Date

INFORMATION FOR AND INSTRUCTIONS TO BIDDERS

The City of Sedona herein referred to as the "City" is defined as the City of Sedona, acting through its legally constituted officials, officers, and employees. The City may waive any informality or reject any or all bids. Any bid may be withdrawn prior to the scheduled time and date for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be opened. No Bidder may withdraw a bid within forty-five (45) days after the actual day of the opening thereof.

Bid prices shall include everything necessary for the completion of the work including but not limited to, materials, equipment, tools, other facilities, management, superintendents, labor, services, insurance, overhead, profit, and Federal, State, and Local taxes.

Each bid must be submitted on the Bid Proposal provided and must be signed by the Bidder or his duly authorized agent. All blank spaces for bid prices must be filled in, in ink or typewritten, IN BOTH WORDS AND NUMBERS where called for in the Bid Proposal. If there is a discrepancy between the price in words and the price in numbers, the price in words will govern.

In case of an error in the extension of the unit price and the total, the unit price shall govern. In the event that the product of a unit price and an estimated quantity does not equal the extended amount quoted, the unit price shall govern, and the correct product of the unit price and the estimated quantity shall be deemed to be the amount bid. If the sum of two (2) or more items in the bid schedule does not equal the total amounts quoted, the individual item amounts shall govern and the correct total shall be deemed to be the amount bid. The bid shall not contain recapitulations of the work to be done.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the Bidder, Bidder's address, and the name of the project for which the bid is submitted.

The City may by statements in the Special Provisions or other part of the specifications require submission of sealed Bid Documentation.

The City may make such investigations as City deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the City all such information and data for this purpose as the City may request. The City reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the City that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein. Conditional bids will not be accepted.

Bidders must correctly prepare and submit the documents listed below with their bids:

1. Bid proposal
2. Bid Guaranty Bond
3. Certification of the Bidder's experience and qualification and statement of Bidder's qualifications
4. List of all proposed Subcontractors
5. Schedule of manufacturers and suppliers, major equipment and material items

6. Non-collusion affidavit
7. Certificate of insurability
8. Signed Addenda

Each bid must be accompanied by either a certified check made payable to the City of Sedona, a cashier's check made payable to the City of Sedona or a bid bond, duly executed by the Bidder as principal and having as surety thereon a surety company licensed to do business in Arizona, in the amount of ten percent (10%) of the bid. The City may retain such checks or bid bonds, of the three (3) apparent lowest Bidders, for a period of forty-five (45) days after the bid opening.

Simultaneously with the delivery of the executed Contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this Contract and for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions included herein. The surety on such bond or bonds or contract bonds must file with each bond a certified and effectively dated copy of their Power of Attorney.

Each Bidder shall have listed, on the form entitled "Proposed Subcontractors", provided in the Proposal, the name, address, and description of the work of each Subcontractor to whom the Bidder proposes to sublet portions of the work in excess of one and one-half percent (1.5%) of the total amount of his Bid. For the purpose of this paragraph, a Subcontractor is defined as one who contracts with the Contractor to provide materials and labor, labor only, or who specially fabricates and installs a portion of the work or improvement according to drawings contained in the Contract Documents. Failure to list Subcontractors may render a Bid non-responsive and may be grounds for rejection of the Bid. Attention is called to the General Conditions Article 13, limiting the total amount of the work, which may be performed by Subcontractors. Alternate Subcontractors for the same work shall not be listed in the bid. However, substitute Subcontractors may be considered as long as they comply with the requirements of these Contract documents.

Subcontractors listed by the Bidder must be competent and experienced in the type of work which they are to perform. No Contractors shall be required to employ any Subcontractor, other person or organization against which he has reasonable objection.

As evidence of his competency to perform the work, Bidder shall complete and submit with his Bid the Bidder's Statement of Qualifications which is bound in the Contract Documents. Low Bidders may be asked to furnish additional data to demonstrate competency. Bidders must be, at the time of bidding and throughout the period of the Contract, licensed as required by the State of Arizona, thoroughly competent, and capable of satisfactorily constructing the Project. Bidder shall certify that he is skilled and regularly engaged in the general class and type of work called for in the Contract Documents. Additionally, Bidders shall comply with all provisions of Arizona Revised Statutes, Title 32, Chapter 10. Further, the Bidder certifies that he is knowledgeable of the unusual and peculiar hazards associated with the general class and type of work required to construct the specific project within the terms given in the Contract Documents. Bidder shall be competent and skilled in the protective measures necessary for the safe performance of the construction work with respect to such unusual and peculiar hazards.

The selected Bidder, upon Bidder's failure or refusal to execute and deliver the Contract and

bonds required within ten (10) consecutive calendar days from and including the date Bidder received notice of the acceptance of his bid, shall forfeit to the City, for such failure or refusal, the security deposited with his bid.

Bidders are required prior to submitting a bid to inspect the site of the work and satisfy themselves by personal examination or by such other means as they may prefer, as to the location of the proposed work, and of the actual conditions.

Entrance by Bidders to the site of the work for purposes of making exploratory excavations shall be by special arrangement with the City Engineer under conditions established by the City. If, during the course of such an examination, a Bidder finds facts or conditions which appear to be in conflict with the Contract Documents, the Bidder must notify the City Engineer and may apply to the City Engineer, in writing, for additional information and explanation before submitting its bid.

Any information provided by the Design Engineer, the City, or any City personnel is not intended to be a substitute for, or a supplement to the independent verification by the Bidder to the extent such independent investigation of site conditions is deemed necessary or desirable by the Bidder. Bidder acknowledges that he has not relied upon City, City personnel, or Design Engineer furnished information regarding site conditions in preparing and submitting a bid hereunder. The Plans show conditions as they are believed to exist, but it is not intended nor is it to be inferred that the conditions as shown therein constitute a representation by the City or any of its officers that such conditions actually exist, nor shall the City or any of its officers be liable for any loss sustained by the Contractor as a result of any variance between any conditions as shown on the Plans and the actual conditions revealed during the progress of the project, or otherwise.

Any subsurface investigations, which may have been conducted at the site of the work, and the corresponding report, may be examined at the City office. Soil investigations, if performed, were conducted for design purposes, and the data shown in the reports are for subsurface conditions found at the time and location of the investigation. The Contractor shall note that there will be no separate payment for rock excavation and **no blasting** is permitted at the site.

The City disclaims responsibility for the interpretation by Bidders of data, such as projecting or extrapolating from the test holes to other locations on the site of the work, soil bearing values and profiles, soil stability and the presence, level and extent of underground water for subsurface conditions during construction operations.

The lands upon which the work is to be performed, right of way for access thereto, and other lands designated for use by the Contractor in performing the work are identified in the Supplemental Conditions or Drawings.

Submission of a bid by the Bidder shall constitute acknowledgement that, if awarded the Contract, the Bidder has relied and is relying on his own examination of (1) the site of the work, (2) access to the site, and (3) all other data and matters requisite to the fulfillment of the work and on his own knowledge of existing facilities on and in the vicinity of the work to be constructed under the Contract.

The Bidders shall examine carefully the Plans and Specifications and the site of the proposed Project and shall solely judge for themselves the nature and location of the work to be done and all the conditions; and the submission of a Bid shall be deemed as conclusive evidence that a Bidder has made the necessary investigation and is prima facie evidence that he is satisfied with the conditions to be encountered, quantity and quality of the work or materials to be performed or furnished, and the requirements and provisions of the Plans and Specifications and the Contract Documents. The Bidder agrees that if he is awarded the Contract he will make no claim against the City, the City Engineer, or any other City officials or City personnel based on ignorance or misunderstanding of any of the provisions of the Contract Documents, nor because of any unforeseen subsurface conditions except in the manner and under the circumstances as provided in the Contract Documents.

Each Bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his Contract. Insofar as possible, the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.

All applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction for the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any Bidder orally. Every proper request for such interpretation shall be made in writing, and to be given consideration must be received at least five (5) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instruction will be in the form of written addenda to the Contract Documents which, if issued, will be emailed to all prospective Bidders (at the respective addresses furnished for such purposes), not later than three (3) calendar days prior to the date fixed for the opening of bids. At any time prior to an announced bid opening time the City reserves the right to issue an addendum extending the bid opening time by one or more days. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligations under his bid as submitted. All Addenda so issued shall become part of the Contract Documents. It shall be the responsibility of each Prospective Bidder to verify that each addendum has been received applicable to the project. Bidders are responsible to check the City website at www.sedonaaz.gov periodically to verify if new addenda have been posted and shall ensure a reliable and accurate email address is provided to the City to be added to the Plan Holder's List. In order to be added to the Plan Holder's List, a bidder shall either purchase plans from the City of Sedona, or submit a request from the email address intended to be used as the bidder's contact email address, to the project manager listed on page I-3.

Before submitting a Proposal, Bidders shall carefully examine the Plans, read the specifications and all other Contract Documents, visit the site of the project, and fully inform themselves as to all existing and local conditions and limitations. It is expressly stipulated that the drawings, Specifications and other Contract Documents set forth the requirements as to the nature of the work and do not purport to control the method of performing work except in those instances

where the nature of the completed work is dependent upon the method of performance.

Submission of a bid shall constitute acknowledgment, upon which the City may rely that the Bidder has thoroughly examined and is familiar with the Contract Documents. Failure or neglect of a Bidder to examine any of the Contract Documents shall in no way relieve him from any obligation with respect to his bid or to the Contract. No claim for additional compensation will be allowed which is based on a lack of knowledge of the work, or of the Contract Documents.

The quantities of the various classes of work to be done and material to be furnished under this Contract, which have been estimated as stated in the Proposal, are only approximate and are to be used solely for the purpose of comparing, on a consistent basis, the Proposals offered for the work under this Contract. The Contractor agrees that the City will not be held responsible if any of the quantities shall be found incorrect; except that in the event that the Contract price may be increased or decreased in accordance with Article 30 of the General Conditions through the issuance of the appropriate change orders to reflect the actual quantities of all items constructed, installed or incorporated in the work, the Contractor will not make any further claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission, or misstatement is found to occur in the estimated quantities, the same shall not invalidate the Contract or release the Contractor from the execution and completion of the whole or any part of the work in accordance with the Specifications and the Plans herein mentioned, and for the prices herein agreed upon and fixed therefore, or excuse him from any of his obligations or liabilities hereunder, or entitle him to any damages or compensation except as may be provided in this Contract.

The successful Bidder, upon award of a Contract, shall commence work on the date specified in the "Notice to Proceed" and shall complete all work in accordance with the time schedule specified. Should the Contractor fail to complete all work in the allotted time period, liquidated damages shall be assessed as specified.

The City invites bids on the forms included as part of this Document to be submitted at such time and place as is stated in the Advertisement for Bids. All blanks in the Bid Proposal must be appropriately filled in with typewriter or ink. **Bidders are instructed not to turn in Bid Proposals that have been separated from the bound Contract Documents. It is the sole responsibility of the Bidder to see that the bid is received in proper time at the time and place stipulated in the Advertisement For Bids.** Any bids received after the scheduled closing time for receipt of bids will be returned to the Bidder unopened.

The bid must be signed in the name of the Bidder and must bear the signature in long hand of the person or persons duly authorized to sign the bid. Changes in or additions to the bid forms, recapitulations of the work bid upon, alternative proposals or any other modifications of the bid which are not specifically called for in the Contract Documents may be subject to City's rejection of the bid as not being responsive to the advertisements. No oral telephone modifications or telegraphic modifications of any bid submitted will be considered.

The bid submitted must not contain erasures, corrections or changes from the printed forms as completed in typewriter or ink, unless such erasures, corrections or changes are authenticated

by affixing in the margin immediately opposite the erasure, correction or change, the full signature of the person who signed the bid or the signature of such other person as may be authorized by the Bidder to make erasures, corrections or changes in the bid, and said authorization must be evidenced by written confirmation, executed by the person authorized to sign the initial bid, attached to the bid at the time of submittal.

If the bid is made by an individual, his or her name, signature, and post office address must be shown; if made by a firm or partnership, the name and post office of the firm or partnership, a list of the partners, and the signature of at least one of the general partners must be shown; if made by a corporation, the bid shall show the name of the state under the laws of which the corporation is chartered, the name and post office address of the corporation, and the title of the person who signs on behalf of the corporation. All signatures must be made in long hand. If a corporation makes the bid, a certified copy of the By-laws or resolution of the board of directors of the corporation shall be furnished showing the authority of the officer signing the bid to execute contracts on behalf of the corporation. If the bid is made by a joint venture, a representative of each of the joint venture firms shall sign the bid. Additionally, the bid shall include a copy of the resolution or agreement empowering the representative to execute the bid and bind the firm to the joint venture.

The City reserves the right to pre-qualify all bids, post-qualify all bids, or reject all bids, not to make an award or accept the Proposal deemed most advantageous and in the best interest of the City. The City shall enter into a Contract with the lowest responsible responsive bidder whose proposal is satisfactory. A written Notice of Award will be sent to the successful Bidder(s).

OR APPROVED EQUAL CLAUSE -- Manufacturers or suppliers of materials and equipment may request that alternatives to specified products be considered equal and that inclusion of such alternatives be permitted in the bids. Such request must be made in writing and received by the City Engineer at least five (5) calendar days prior to the date bids are to be received. Granting a request that an alternative product be considered equal to those specified may be made only by the issuance of an Addendum by the City. Denial of the request during bidding does not waive the manufacturer's or supplier's right to offer the alternative product to the Contractor after Award of the Contract. After Award of Contract, the offer will be considered as a substitution as provided under Article 6 of the General Conditions and will be considered only if the Engineer believes the offer of substitution is equal to or superior in quality to the specified product.

PREPARATION OF BID

- A. City reserves the right to reject any or all Bids, to waive any or all informalities, and the right to disregard all nonconforming, non-responsive or conditional Bids.
- B. City reserves the right to reject any Bid not accompanied by specified documentation and Bid security.
- C. City reserves the right to reject any Bid if it shows any omissions, alterations of form, additions not called for, conditions or qualifications, or irregularities of any

kind.

- D. City reserves the right to reject any Bid that, in his sole discretion, is considered to be unreasonable as to the amount Bid for any lump sum or unit price item.
- E. A Bidder may withdraw his Bid before the time fixed for the opening of Bids by communicating his purpose in writing to the City. Upon receipt of such written notice, the unopened Bid will be returned to the Bidder.
- F. The withdrawal of a Bid does not prejudice the right of a Bidder to file a new Bid, so long as the new Bid is submitted in conformance with the Information for and Instructions to Bidders prior to the closing time indicated for Bids in the Advertisement for Proposals.
- G. No Bidder may withdraw his Bid for forty-five (45) days after the time established for receiving Bids or before the Award and execution of the Contract unless the Award is delayed for a period exceeding forty-five (45) calendar days. The Award of the Contract to one party does not constitute a waiver of this condition.
- H. In evaluating Bids, City will consider the qualifications of Bidders; whether or not the Bids comply with the prescribed requirements; the alternatives, if any; the time or times for completion as stated in the Bid Form; and the lump sum and unit prices, if requested in the Bid Form.
- I. City may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the work for which the identity of Subcontractors and other persons and organizations must be submitted.
- J. City may conduct such investigation deemed necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Bidders, proposed Subcontractors and other persons and organizations to do the work in accordance with the Contract Documents. City reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to City's satisfaction.
- K. Modification of a Bid already received will be considered only if the modification is received prior to the time established for receiving Bids. Modifications shall be made in writing, executed, and submitted in the same form and manner as the original Bid. The communication should not reveal the Bid Price, but should provide the addition or subtraction or other modifications so that the final price or terms will not be shown until the sealed Bids are opened.

CONTRACT

THIS CONTRACT, made and entered into this ____th day of _____, **2015** by and between the City of Sedona, Arizona, hereinafter called the "Owner", and _____. Herein after called the "Contractor".

WITNESSETH:

WHEREAS, the City has caused Contract Documents to be prepared for the construction of the **WWRP Injection Well No. 1 & Well No. 2 Equipping Project**, City of Sedona, Arizona, as described therein; and

WHEREAS, the Contractor has offered to perform the proposed work in accordance with the terms of the Contract; and

WHEREAS, the Contractor, as will appear by reference to the minutes of the proceedings of the City Council was duly awarded the work.

NOW, THEREFORE, the parties hereto hereby stipulate, covenant and agree as follows:

1. The Contractor promises and agrees to and with the City that it shall perform everything required to be performed and shall provide and furnish all the labor, materials, necessary tools, expendable equipment, and all utility and transportation services required to perform and complete in a workmanlike manner all of the work required in connection with construction of **WWRP Injection Well No. 1 & Well No. 2 Equipping Project** all in strict accordance with the Specifications and Drawings, including any and all Addenda, and in strict compliance with the Contractor's Proposal and all other Contract Documents, which are a part of the Contract; and the Contractor shall do everything required by this Contract and the other documents constituting a part thereof.
2. The Contractor agrees to perform all of the work described above in accordance with the Contract Documents and comply with the terms therein for the initial estimated Contract price of \$_____, subject to increase or decrease in accordance with the Contract Documents, and the Bid Schedule set forth therein; and the City agrees to pay the Contract Prices in accordance with the Bid Schedule for the performance of the work described herein in accordance with the Contract Documents.
3. The Contractor and the City agree that the terms, conditions, and covenants of the Contract are set forth in the Contract Documents including all Plans and Technical Specifications, Typical Details, and the Drawings Sheets 1 through 73, all defined as the Contract Documents, and by this reference made a part hereof as if fully set forth herein.
4. The Contractor and the City agree that each will be bound by all terms and conditions of all of the Plans and Technical Specifications, and Contract Documents, as if the same were fully set forth herein, and hereby incorporate all of the foregoing into this Agreement.

5. The Contractor shall abide by all the laws of the United States of America, State of Arizona, Coconino/Yavapai Counties, and the City of Sedona.
6. The Contractor shall carry Workmen's Compensation Insurance and require all Subcontractors to carry Workmen's Compensation Insurance as required by the Law of the State of Arizona, and all other insurance as set forth in the General Conditions.
7. Work under this Contract shall commence on the date specified in the written Notice to Proceed from the City to the Contractor. Upon receipt of said Notice, the Contractor shall diligently and continuously prosecute and complete all work under this Contract within the time specified in the Advertisement for Bids and as said Advertisement may have been amended by issued addendum.
8. The Contract Document consist of the following component parts, all of which are a part of this Contract whether herein set out verbatim, or attached hereto:

Advertisement for Bids
Information for and Instructions to Bidders
Bid Proposal and Bid Guaranty Bond
Contract (this document)
Change Orders
Addenda
Performance Bond, Labor and Material Payment Bond
Special Conditions
General Conditions
Technical Specifications
Notice of Award
Notice to Proceed
Plans and Drawings
Design Reports (including Geotech Report)
Standard Specifications
Insurance Certificates

The above named documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, the order of precedence is as follows:

1. Change Orders
2. Contract (this document), including addenda
3. Payment and Performance Bonds
4. Advertisement for Bids
5. Information for and Instructions to Bidders
6. Notice of Award
7. Notice to Proceed
8. Special Conditions
9. Bid Proposal
10. Technical Specifications

11. Plans and Drawings
12. General Conditions
13. Bid Guaranty Bond
14. Standard Specifications

In the event there is a conflict between any of the above listed documents, the provision of the document with the lower numerical value shall govern those documents with a higher numerical value. Within a category, the last in time is first in precedence.

The Contractor shall not take advantage of any apparent error or omission in the Plans or Specifications. In the event the Contractor discovers such an error or omission, he shall immediately notify the Owner. The City will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Plans and Specifications.

9. As part of the inducement for City to enter into this Agreement, Contractor makes the following representations:
 - A. Contractor has familiarized himself with the nature and extent of the Contract Documents, work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress, or performance of the work.
 - B. Contractor has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or those reports that otherwise may affect cost, progress or performance of the work, which were utilized by Design Engineer in the preparation of the Drawings and Specifications and which have been identified in the Contract Documents.
 - C. Contractor has made or caused to be made examinations, investigations and tests, and studies of such reports and related data as he deems necessary for the performance of the work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by Contractor for such purposes.
 - D. Contractor has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.
 - E. **Contractor has given the City Engineer written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents** and the written resolution thereof by City Engineer is acceptable to Contractor.
 - F. Contractor has attended mandatory pre-bid meetings and walk-throughs.
10. A. No assignment by a party hereto of any rights under or interest in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, monies

that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

- B. City and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, and its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.
 - C. Pursuant to Arizona Revised Statutes Section 38-511, the provisions of which are incorporated by reference as if fully set forth herein, all parties are hereby given notice that this Agreement is subject to cancellation by the City if any person significantly involved in initiating, negotiating, securing, drafting, or creating the Contract or Contract Documents on behalf of the City is, at any time while the Contract or Contract Document or any extension thereof is in effect, an employee or agent of any other party to the Contract or Contract Documents in any capacity or a consultant to any other party to the Contract or Contract Documents with respect to the subject matter of the Contract or Contract Documents.
11. During the performance of this Agreement, Contractor may also be under contract with the City for performance of work on other projects. A breach in the performance of any of Contractor's obligations under this Agreement shall constitute a breach of Contractor's obligations under any other agreement with the City and the breach by Contractor under other agreement with the City shall also constitute a breach of Contractor's obligations under this Agreement. The City may offset any amounts owed by Contractor under any such other agreement from any amounts owed to Contractor under this Agreement.
12. The Contract Documents constitute the entire Agreement between the parties.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in triplicate (3) each of which shall be deemed an original on the date first above written.

CITY: City of Sedona, Arizona

BY: _____

NAME: _____
(please type)

TITLE: _____

(SEAL)

ATTEST:

BY: _____

NAME: _____
(please type)

CONTRACTOR:

BY: _____

NAME: _____
(please type)

TITLE: _____

(SEAL)

ATTEST:

BY: _____

NAME: _____
(please type)

APPROVED AS TO LEGAL FORM:

BY: _____
(City Attorney)

DATE: _____

STATUTORY BID BOND

PURSUANT TO TITLE 34, CHAPTER 2, ARTICLE 1
OF THE ARIZONA REVISED STATUTES

(This bond must not be less than ten percent (10%) of the bid amount)

KNOW ALL MEN BY THESE PRESENTS:

That we, the undersigned _____, (hereinafter "Principal"), as Principal, and _____, a corporation organized and existing under the laws of the State of _____, with its principal offices in the City of _____, (hereinafter "Surety"), as Surety, are held and firmly bound unto the City of Sedona, the State of Arizona, (hereinafter "Obligee"), in the amount of _____ (Dollars) (\$ _____), for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for

WWRP Injection Well No. 1 & Well No. 2 Equipping Project

NOW, THEREFORE, if the Obligee accepts the proposal of the Principal and the Principal enters into a contract with the Obligee in accordance with the terms of the proposal and gives the bonds and certificates of insurance as specified in the Contract Documents with good and sufficient surety for the faithful performance of the contract and for the prompt payment of labor and materials furnished in the prosecution of the contract, or in the event of the failure of the Principal to enter into the contract and give the bonds and certificates of insurance, if the Principal pays to the Obligee the difference not to exceed the penalty of the bond between the amount specified in the proposal and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by the proposal then this obligation is void. Otherwise, it remains in full force and effect provided, however, that this bond is executed pursuant to the provisions of Section 34-201, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of the section to the extent as if it were copied at length herein.

Witness our hands this _____ day of _____, 2015.

PRINCIPAL Seal

By: _____

Title: _____

AGENCY OF RECORD

AGENCY ADDRESS

SURETY Seal

(Attach Power of Attorney form)

STATUTORY BID BOND
(Check to accompany bid)

(Note: The following form shall be used when a check accompanies bid)

Accompanying this proposal is a Cashiers check payable to the order of the City of Sedona hereinafter referred to as "City," for **WWRP Injection Well No. 1 & Well No. 2 Equipping Project** in the amount of _____ Dollars (\$_____), this amount being ten percent (10%) of the total amount of the Bid. The proceeds of this check shall become the property of said City provided this proposal shall be accepted by said City through action of its legally constituted contracting authorities and the undersigned shall fail to execute a contract and furnish the required Performance and Payment Bonds and proof of insurance coverage within the stipulated time; otherwise, the check shall be returned to the undersigned. The proceeds of this check shall also become the property of the City if the undersigned shall withdraw his bid within the period of forty-five (45) days after the date set for the opening thereof, unless otherwise required by law, and notwithstanding the award of the Contract to another Bidder.

Bidder

(NOTE: If the Bidder desires to use a bond instead of a check, the Bid Bond Form on the previous two pages shall be executed -- the sum of this bond shall not be less than ten percent (10%) of the total amount of this Bid.)

STATUTORY PERFORMANCE BOND
PURSUANT TO TITLE 34, CHAPTER 2, ARTICLE 2,
OF THE ARIZONA REVISED STATUTES

(This Bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS:

That, _____ (hereinafter "Principal"), as Principal,
and _____, a corporation
organized and existing under the laws of the State of _____ with its principal office
in the City of _____, (hereinafter "Surety"), as Surety, are held and firmly bound
unto the City of Sedona, State of Arizona, (hereinafter "Obligee") in the amount of _____
_____ (Dollars) (\$ _____) for the payment whereof, the
said Principal and Surety bind themselves, and their heirs, administrators, executors, successors
and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written Contract with the
_____, dated the ____ day of _____, 2015 to

_____ which contract is
hereby referred to and made a part hereof as fully and to the same extent as if copied at length
herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal faithfully
performs and fulfills all of the undertakings, covenants, terms conditions and agreements of the
Contract during the original term of the Contract and any extension of the Contract, with or
without notice to the Surety, and during the life of any guaranty required under the Contract,
and also performs and fulfills all of the undertakings, covenants, terms conditions and
agreements of all duly authorized modifications of the Contract that may hereafter be made,
notice of which modifications to the Surety being hereby waived, the above obligation is void.
Otherwise it remains in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the extent as if it were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this _____ day of _____, 2015.

PRINCIPAL Seal

By: _____

Title: _____

AGENCY OF RECORD

AGENCY ADDRESS

SURETY Seal

By: _____

(Attach Power of Attorney form)

STATUTORY PAYMENT BOND
PURSUANT TO
TITLE 34, CHAPTER 2, ARTICLE 2,
OF THE ARIZONA REVISED STATUTES

(This Bond must be 100% of the Contract amount)

KNOW ALL MEN BY THESE PRESENTS:

That, _____ (hereinafter "Principal"), as Principal, and _____, a corporation organized and existing under the laws of the State of _____ with its principal office in the City of _____, (hereinafter "Surety"), as Surety, are held and firmly bound unto the City of Sedona, State of Arizona (hereinafter "Obligee") in the amount of _____ (Dollars) (\$_____) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee dated the _____ day of _____, 2015, _____

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal promptly pays all monies due to all persons supplying labor or materials to the Principal or the Principal's subcontractors in the prosecution of the work provided for in contract, this obligation is void. Otherwise it remains in full force and effect.

PROVIDED HOWEVER, that this bond is executed pursuant to the provisions of Title 34, Chapter 2, Article 2, of the Arizona Revised Statutes, and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of Title 34, Chapter 2, Article 2, Arizona Revised Statutes, to the same extent as if it were copied at length in this agreement.

The prevailing party in a suit on this bond shall recover as part of the judgment reasonable attorney fees that may be fixed by a judge of the Court.

Witness our hands this _____ day of _____, 2015.

PRINCIPAL Seal

By: _____

Title: _____

AGENCY OF RECORD

AGENCY ADDRESS

SURETY Seal

By: _____

(Attach Power of Attorney form)

DO NOT DETACH AND SUBMIT SEPARATE FROM OTHER CONTRACT DOCUMENTS

BID PROPOSAL

City of Sedona:

The undersigned Bidder, having examined the specifications, drawings and all other documents contained in the Contract Documents, attended all mandatory pre-bid meetings, and having examined the site where the work is being performed, and having familiarized himself with any local conditions affecting the work and having knowledge of the cost of work at the place where the work is to be done, hereby proposes to execute and perform the formal Contract set forth in these Contract Documents, of which this Proposal forms a part, and will do the work therein described on the terms and conditions therein set forth; and furnish all required labor, materials, tools, equipment, transportation and services for said work, and pay all taxes and other incidental costs, all in strict conformity with the drawings and specifications forming a part of the Contract Documents for the Unit Prices entered based on the Bidding Schedule included herein, said prices to only be amended or altered in accordance with the Contract Documents.

It is understood that any listed quantities of work to be done at unit prices are **approximate** only, and are intended to serve as a guide in evaluating bids.

It is further agreed that any quantities of work to be done at unit prices and material to be furnished may be increased or decreased as may be considered necessary, in the opinion of the City, to complete the work fully as planned and contemplated and that all quantities of work, whether increased or decreased, are to be performed at the unit prices set forth in the Bid Schedule, except as otherwise provided for in the Contract Documents.

It is further agreed that payments may be increased to cover additional work ordered by the City, but not shown on the Plans or required by the Specifications in accordance with General Condition No. 47. Similarly, payments may decrease if work is deleted or changed.

By submitting a bid, the Bidder acknowledges the understanding that the bid process is solely intended to serve the public interest in achieving the highest quality of services and goods at the lowest price, and that no right, interest, or expectation shall vest or inure to the benefit of Bidders as a result of any reliance or participation in the process.

In submitting this Proposal, it is understood that the right is reserved by the City to reject any or all Proposals and waive informalities or irregularities in Proposals. The City also reserves the right to delay the award of a contract for a period not to exceed forty-five (45) days from the date of the opening of bids.

The undersigned Bidder further agrees, if awarded the contract for the work included in this Proposal, to begin and to complete and deliver the work contemplated in accordance with all the conditions set forth in the Contract Documents.

The undersigned Bidder has carefully checked the figures inserted by him and understands that they are the Bidder's sole responsibility, and the City will not be responsible for any errors or omissions on the part of the undersigned Bidder in preparing this Proposal although City may check and correct mathematical accuracy in evaluation of the bids.

The undersigned Bidder certifies that this Proposal is genuine, not collusive, or made in the interest or behalf of any person not named as provided in the Information for and Instructions to Bidders, and that the undersigned has not, directly, or indirectly, induced or solicited any other Bidder, or induced any other person, firm, or corporation to refrain from submitting a proposal, and the undersigned has not in any manner sought by collusion to secure for himself an advantage over any other Bidder.

Attached is a certified check without endorsement and with conditions payable to the City of Sedona in the sum of ten percent (10%) of the total bid drawn on a bank which is a member of Federal Reserve System or which is a member of the Federal Deposit Insurance Corporation, or a cashier's check for ten percent (10%) of the total bid or a Bid Bond written by an approved surety company for ten percent (10%) of the total bid.

The undersigned submits a bid bond pursuant to Section 34-201, Arizona Revised Statutes, payable to the City, equal to ten percent (10%) of the total amount of this proposal, and agrees that said bid bond shall be given as a guarantee that the Bidder will enter into the Contract within the time herein stated if the award is made to him by the City. In case of the Bidder's refusal or failure to do so within ten (10) days of Notice of the Award of Contract, or within five (5) days after receiving notice from the City of the rejection of any objections to the Notice of Award, the bond will be forfeited.

The Bidder grants the City the right to hold the lowest three (3) Proposals received, together with the accompanying bid securities, for a period of forty-five (45) days after the date of opening of said Proposals.

The undersigned Bidder further grants the City the right to award this Contract on the basis of any possible combinations of Base Bid and add/deduct alternate(s) (if any) that best suits the City's needs.

Bidder agrees that the City has determined that a reasonable time for the **WWRP Injection Well No. 1 & Well No. 2 Equipping Project** is the contract time stated in the Advertisement for Bids and issued addendum. The Bidder agrees that this proposal is submitted on this basis, subject to provisions contained in the Contract Documents relating to extensions of time, and agrees to plan and prosecute the work with such diligence that the work shall be completed within the time specified.

Bidder agrees that the bid includes the following items which have been completed in full by the Bidder:

- (a) Bid or Proposal
- (b) Bid Schedule

- (c) Bid Guaranty Bond
- (d) Certification of the Bidder's experience and qualifications and statement of Bidder's Qualifications
- (e) List of all proposed Subcontractors
- (f) Schedule of manufacturers and suppliers, major equipment and material items
- (g) Non-collusion Affidavit
- (h) Certificate of Insurability
- (i) Signed Addenda

Bidder agrees that the City assumes no responsibility for any understanding or representation made by any of its Council members, officers or agents during or prior to the bidding and execution of the Contract, unless (1) such understanding or representations are expressly stated in the Contract or Addenda thereto, or (2) the Contract expressly provides that responsibility therefore is assumed by the City, or (3) said understanding or representation is contained in the information supplied to Bidders by the City or the City Engineer, or as information distributed pursuant to the Information for and Instructions to Bidders. The Bidder further understands that only the Mayor and Council of the City through action taken at a properly noticed meeting, can waive any term or condition or requirement of this Contract or of the bid.

Bidder agrees that all terms set forth in the Information for and Instructions to Bidders as well as all other Contract Documents shall be binding upon the Bidder if a Notice of Award is issued in favor of said Bidder by the City.

Bidder agrees that all major equipment and suppliers shall be set forth herein on the attached "Schedule of Manufacturers and Suppliers, Major Equipment and Material Items",

Bidder understands that this project is to be constructed in compliance with all City, State and Federal laws, rules and regulations, which are applicable to the project and the Contractor and all work performed hereunder.

In making this proposal, the undersigned incorporates and acknowledges all definitions set forth in the Contract Documents.

The undersigned hereby submits this proposal and the accompanying Bid Schedule as its proposal to construct the improvements described in the Contract Documents.

The name and location of the place of business of each Subcontractor who will perform work or labor or render service to the general Contractor in or about the construction of the work or improvements in an amount in excess of one and one-half percent (1.5%) of the general Contractor's total Bid, and the portion of the work which will be done by each Subcontractor is set forth in the Proposed Subcontractor list attached hereto.

Bidder has received all Addenda before submission of Bid, and has examined the same and has included them in the Contract Documents prior to submitting the Bid and has submitted the Bid based upon them.

The Bonding company which will supply the required Performance and Payment bond is:

Bid Schedule

**City of Sedona – WWRP Injection Well No. 1 & Well No. 2 Equipping Project
Project # 2015-ES-003**

ITEM NO.	ITEM DESCRIPTION	QTY	UNIT	UNIT PRICE	EXTENDED TOTAL
1	MOBILIZATION	1	LS		
2	POTHOLING	1	LS		
3	LOCATE UNDERGROUND UTILITIES	1	LS		
4	EXCAVATION	1	LS		
5	BACKFILL	1	LS		
6	GRADING	1	LS		
7	DEWATERING	1	LS		
8	YARD PIPING	1	LS		
9	YARD ELECTRICAL	1	LS		
10	PUMP STATION STRUCTURAL	1	LS		
11	PUMP STATION MECHANICAL	1	LS		
12	PUMP STATION ELECTRICAL	1	LS		
13	PUMP STATION INSTRUMENTATION & CONTROL	1	LS		
14	PUMP STATION PROGRAMMING	1	LS		
15	CARTRIDGE FILTER STRUCTURAL	1	LS		
16	CARTRIDGE FILTER MECHANICAL	1	LS		
17	SODIUM HYPOCHLORITE / ELECTRICAL BUILDING STRUCTURAL	1	LS		
18	SODIUM HYPOCHLORITE / ELECTRICAL BUILDING MECHANICAL	1	LS		
19	SODIUM HYPOCHLORITE / ELECTRICAL BUILDING ELECTRICAL	1	LS		
20	SODIUM HYPOCHLORITE / ELECTRICAL BUILDING INSTRUMENTATION & CONTROL	1	LS		
21	SODIUM HYPOCHLORITE / ELECTRICAL BUILDING PROGRAMMING	1	LS		
22	WELL SITE NO. 1 SITE FENCE & GATES	1	LS		
23	WELL SITE NO. 1 STRUCTURAL	1	LS		
24	WELL SITE NO. 1 MECHANICAL	1	LS		
25	WELL SITE NO. 1 ELECTRICAL	1	LS		
26	WELL SITE NO. 1 INSTRUMENTATION & CONTROL	1	LS		
27	WELL SITE NO. 1 SITE PROGRAMMING	1	LS		
28	WELL SITE NO. 2 SITE FENCE & GATES	1	LS		
29	WELL SITE NO. 2 STRUCTURAL	1	LS		
30	WELL SITE NO. 2 MECHANICAL	1	LS		

31	WELL SITE NO. 2 ELECTRICAL	1	LS		
32	WELL SITE NO. 2 INSTRUMENTATION & CONTROL	1	LS		
33	WELL SITE NO. 2 SITE PROGRAMMING	1	LS		
34	START-UP AND TESTING	1	LS		
35	STORM WATER POLLUTION PREVENTION PLAN	1	LS		
36	DEMOBILIZATION	1	LS		
				TOTAL BID	
CIP: COMPLETE IN PLACE					
Owner reserves the right to vary the quantities shown at their discretion. The contractor will accept the quantities if no corrections are made at the conclusion of the pre-bid meeting. All facilities incidental to the item are included in the unit price estimate. Bid Prices submitted include all local, state and federal taxes.					

UNIT PRICES SHALL BE USED WHEN EXTENSION OF UNIT PRICES AND TOTAL AMOUNT CONFLICT. WRITTEN UNIT PRICES SHALL BE USED WHEN WRITTEN AND NUMERICAL UNIT PRICES CONFLICT. BID PRICES SUBMITTED INCLUDE ALL LOCAL, STATE AND FEDERAL TAXES.

The City of Sedona reserves the right to reject all bids, or to award only the base bid, or to award a bid based upon the total of the Base Bid plus additive alternate(s) as selected for award from the additive alternate bid schedule, if additive alternate bid schedule is applicable.

Provide unit prices for the following items, which shall be valid for the duration of the Project. Unit prices shall represent fully installed material (for piping, this includes trenching, backfill, etc. assuming 3 ft. cover). Unit prices shall be valid for up to the following quantities:

- 1. Piping: 1,000 LF**
- 2. Asphalt Pavement: 1,000 SF**
- 3. Duct Bank: 1,000 LF**

ITEM DESCRIPTION	UNIT	UNIT PRICE
3-INCH SCHEDULE 80 PVC PIPE, SW JOINTS	LF	
6-INCH C900 PVC PIPE, DR 18, RESTRAINED JOINT	LF	
6-INCH C900 PVC PIPE, DR 18, PUSH ON JOINT	LF	
6-INCH CL53 CEMENT MORTAR LINED DIP, MECHANICAL RESTRAINED JOINT, POLY-WRAPPED	LF	
ABC access road per Keynote 3 on Sheet 10-C-01	SF	
Concrete encased duct bank per Typical Details	LF	
PLC Programming	Hour	

The undersigned is licensed in accordance with the Laws of the State of Arizona:

License Number _____ Class _____

NOW: In compliance with the Notice Inviting Bids and all the provisions hereinbefore and after stipulated, the undersigned, with full cognizance thereof, hereby proposes to perform the Work for the prices set forth in the preceding Schedule(s) upon which award of contract is made.

Individual Contractor Name: _____
Address: _____

Partnership Name: _____
Business Address: _____

By: _____, Partner
Other Partners: _____

Corporation Name: _____
Business Address: _____

By: _____
_____, President
_____, Secretary

Organized under the Laws of the State of _____

Date: _____ Contractor: _____

(SEAL) By: _____

The undersigned Bidder acknowledges receipt of the following addendum:

Addendum #	Dated	Initial
_____	_____	_____
_____	_____	_____

Signature of Bidder

PROPOSED SUBCONTRACTORS

The following information gives the name, business address, and portion of work (description of work to be done) for each Subcontractor that will be used in the work if the Bidder is awarded the Contract. No Subcontractor doing work in excess of one and one-half percent (1.5%) of the total amount of the bid and who is not listed shall be used without the written approval of the City, which shall not be unreasonably withheld. (Additional supporting data may be attached to this page. Each page shall be sequentially numbered and headed "Proposed Subcontractors" and shall be signed.) Substitutions of Subcontractors may be made by the Bidder as long as all Subcontractors used meet all requirements for all Subcontractors and all subcontract agreements meet all requirements set forth in the Contract Documents. The total value of subcontracted work shall not exceed sixty-five percent (65%) of the contract work as bid. The Bidder shall perform 35% or more of the contract work using Bidder's organization, unless stated otherwise in the specifications. **The subcontractor shall have the license required for the work performed. The subcontractor will be required to have a current City of Sedona Business License for the duration of the contract.**

Subcontractor Name	Business Address	Description of Work

Signature of Bidder

WORKMEN'S COMPENSATION INSURANCE
CERTIFICATE

I am aware of the provisions of Arizona Law, which require every employer to be insured against liability for workmen's compensation in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract.

Date: _____

By: _____

NON-COLLUSION AFFIDAVIT

TO BE EXECUTED BY EACH AWARDEE OF A PRINCIPAL CONTRACT IN THE
STATE OF ARIZONA }

COUNTY OF } ss
}

_____, being first duly sworn, deposes and says:

1. That he is _____ (sole owner, a partner, president, secretary, etc.)
of _____, the party
making the foregoing Bid.
2. That such Bid is not made in the interest of or on behalf of any undisclosed person,
partnership, company association, organization, or corporation.
3. That such Bid is genuine and not collusive or sham.
4. That said bidder has not directly induced or solicited any other Bidder to put in a false or
sham Bid, and has not directly or indirectly colluded, conspired, connived, or agreed
with any Bidder or anyone else to put in a sham Bid, or that anyone shall refrain from
bidding.
5. That said Bidder has not in any manner, directly or indirectly, sought by agreement,
communication, or conference with anyone to fix the Bid Price of said Bidder or of any
other Bidder, nor to fix any overhead, profit, or cost element of such Bid Price, nor of
that of any other Bidder, nor to secure any advantage against the public body awarding
the Contract or anyone interested in the proposed Contract.
6. That all statements contained in such Bid are true.
7. That said Bidder has not, directly or indirectly, submitted his Bid Price or any breakdown
thereof, nor the contents thereof, nor divulged information or data relative thereto, nor
paid and will not pay any fee in connection therewith to any corporation, partnership,
company, association, organization, bid depository, nor to any member or agent
thereof, nor to any other individual except to such person or persons as have a
partnership or other financial interest with said Bidder in his general business.

NON-COLLUSION AFFIDAVIT

(Continued)

Name of Business

By

Title

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

My Commission expires: _____

(Notary Public)

STATEMENT OF BIDDER'S QUALIFICATIONS

If bidder is a corporation, answer the following:

- (a) Date of incorporation; _____
- (b) State of incorporation; _____
- (c) President's name; _____
- (d) Vice President's name(s); _____
- (e) Secretary's or Clerk's name; _____
- (f) Treasurer's name; _____

If bidder is a partnership, answer the following:

- (a) Date of organization _____
- (b) Name and address of all partners. State whether it is a general or limited partnership: _____

If other than a corporation or partnership, describe the organization and name principals:

Major Types of Work Done by Company: _____

Principal Office: _____

Telephone Number: _____

Contractor's Bank and Local Contact: _____

EXPERIENCE QUESTIONNAIRE

1. How many years has your organization been in business as a contractor under your present business name?

2. How many years of experience in the proposed type and size of construction work has your organization had:

(a) As a general contractor? _____

(b) As a subcontractor? _____

3. Are you licensed as a General Engineering contractor, or any other title?

If "yes", in what city, county and state? _____

What class license and number? _____

4. List the most recent projects your organization has had in construction of work similar in type and size to the work proposed herein:

<u>Contract Amount</u>	<u>Class of Work</u>	<u>When Completed</u>	<u>Name, Address and Telephone No. of City</u>
------------------------	----------------------	-----------------------	--

5. Has any construction contract to which you have been a party been terminated by the owner; have you ever terminated work on a project prior to its completion for any reason; has any surety which issued a performance bond on your behalf ever completed the work in its own name or financed such completion on your behalf; has any surety extended any monies in connection with the contract for which they furnished a bond

on your behalf? If the answer to any portion of this question is “yes”, please furnish details of all such occurrences including the name of the owner, architect or engineer, and surety, name and date of project.

- YES NO

6. Has any officer or partner of your organization ever been an officer or partner of another organization that had any construction contract terminated by the owner; terminated work on a project prior to its completion for any reason; had any surety which issued a performance bond complete the work in its own name or finance such completion; or had any surety expend any monies in connection with the contract for which they furnished a bond? If the answer to any portion of this question is “yes”, please furnish details of all such occurrences including name of owner, architect or engineer, and surety, name and date of project.

- YES NO

7. What is the injection well experience of the principal individuals of your organization?

Individual's Name	Yrs Exp with this Company	Present Position or Office	Years of Construction Experience	Magnitude & Type of Work	In What Capacity

8. How many well equipping projects, specifically using vertical turbines, has your company, or the sub-contractor responsible for this work, completed in the past 10-years? (This does not include an individual’s experience, separate from the company’s experience; an individual’s experience should be listed in their resume, if provided. **List a minimum of 3 projects.**)

NO.	Project Name	Owner	Contact	Contact Phone	Amount
1					
2					
3					

4					
5					
6					

9. How many piping projects has your company, or the sub-contractor responsible for this work, completed in the past 10-years? (This does not include an individual's experience, separate from the company's experience; an individual's experience should be listed in their resume, if provided. **List a minimum of 6 projects.**)

NO.	Project Name	Owner	Contact	Contact Phone	Amount
1					
2					
3					
4					
5					
6					

10. How many wastewater treatment facility projects involving electrical and programming work has your company, or the sub-contractor responsible for this work, completed in the past 10-years? (This does not include an individual's experience, separate from the company's experience; an individual's experience should be listed in their resume, if provided. **List a minimum of 6 projects.**)

NO.	Project Name	Owner	Contact	Contact Phone	Amount
1					
2					
3					
4					
5					
6					

11. How many projects with deep rock excavation has your company completed in the past 10-years? (This does not include an individual's experience, separate from the company's experience; an individual's experience should be listed in their resume, if provided. **List a minimum of 6 projects.**)

NO.	Project Name	Owner	Contact	Contact Phone	Amount
1					
2					
3					
4					
5					
6					

12. How many municipal projects, has your company completed in the past 10-years? (This does not include an individual's experience, separate from the company's experience; an individual's experience should be listed in their resume, if provided. **List a minimum of 6 projects.**)

NO.	Project Name	Owner	Contact	Contact Phone	Amount
1					
2					
3					
4					
5					
6					

CONTRACTOR'S FINANCIAL STATEMENT

1. Submit the most recent financial statements, including the Balance Sheet, Income Statement, sources and uses of funds, notes to the financial statement, and the auditor's opinion, that cover the most recent twelve (12) month period. These statements must have been audited by a Certified Public Accountant. However, if the prospective bidder has previously performed satisfactory work according to the City of Sedona's Engineering Department, unaudited financial statements may be allowed.

Financial statements must be submitted on an accrual basis, in a form which clearly indicates the bidder's assets, liabilities, and net worth.

2. Also submit the most recent unaudited financial statements subsequent to number 1 above.

(Financial statements shall be required of and submitted by the apparent low bidder within two (2) days after the bid opening)

CERTIFICATE OF INSURABILITY

I hereby certify that as Bidder to the City of Sedona, Arizona, _____ project, I am fully aware of the requirements of the City insurance requirements for contractors and that by submitting this bid proposal, assure the City that I am able to produce the required minimum insurance coverage should I be selected to be the successful Bidder.

Should I be selected to be the successful Bidder and then become unable to produce the insurance coverage within ten (10) days of receipt of the Notice of Award, I understand that my bid will be rejected and that I will forfeit my bid bond.

BY: _____ Date _____

Title: _____

SPECIAL CONDITIONS

General

Work shall be in accordance with Uniform Standard Specifications for Public Works Construction, distributed by Maricopa Association of Governments, 2012 edition (MAG), except to the extent that these specifications specify other procedures, processes, forms, materials, details, or other direction regarding the work, and as required to comply with local ordinances and regulations.

Whenever the term County is used it shall be held to mean the City of Sedona. Whenever the term County Engineer is used it shall be held to refer to the City Engineer.

Electrical work shall be subject to inspection by the City of Sedona Building Safety Division and compliance with its requirements.

General Provisions

The General Conditions and Specifications shall be considered as immediately following the Special Conditions in Order of Precedence and are part of the Contract documents.

A. Work Hours/Schedule

The regular working hours for this contract shall be from 7:00 AM to 5:30 PM Monday through Friday. Work will not be allowed on City of Sedona holidays regardless of the weekday. Work hours shall include clean up time. The City operates on a four-day workweek; only work not requiring immediate inspection, by the City, may be performed during the Friday work hours. Other than these work hours, all other parts of General Conditions Section 9 "Schedule of Construction" shall remain intact. The contractor shall provide the City Engineer with a written work schedule projecting out at least two work weeks. Permission to work non-regular work hours shall be subject to approval by the City Engineer or designee and the provisions of General Conditions, Section 39.

The schedule, required by Section 9 and 31.G.3 of the General Conditions, is amended as follows. The schedule shall be updated at each progress meeting, which will occur weekly. This schedule update shall include a detailed two week look ahead, it shall indicate work requiring inspection. The schedule shall be submitted in an electronic format compatible with Microsoft Project Standard 2007, and hard copy format.

The City of Sedona has the following holiday schedule:

- New Year's Day, January 1st
- Martin Luther King/Civil Rights Day, 3rd Monday of January
- President's Day, 3rd Monday in February
- Memorial Day, Last Monday in May

Independence Day, July 4th
Labor Day, 1st Monday in September
Veteran's Day, November 11th
Thanksgiving Day, 4th Thursday in November AND the Friday after Thanksgiving Day
Christmas Day, December 25th.

B. Start of Construction

Construction shall not begin until the Contractor has at a minimum provided the following:

- The Storm Water Pollution Control Plan provisions are in place per the SWPPP in the Civil Plans
- The contractor shall have a City of Sedona NOI for storm water pollution prevention
- Survey stakes and marks have been placed in the field to accommodate at least two weeks construction work and survey notes have been provided to the City as per the project specifications
- Equipment Rate Submittal as required by Section 47.D.3 of the General Conditions
- A complete project schedule as required by the General Conditions and Section 2 of the Special Conditions

This provision shall not require that the City of Sedona refrain from issuing a notice to proceed or require an extension of time to accommodate Contractor compliance with it.

C. Project Control

- The horizontal and vertical control for this project is shown on the civil drawings
- The benchmarks for this project are indicated on the civil drawings
- The Contractor shall be responsible for all survey on the project **see Section 15 of the General Conditions.**

D. Submittals

In addition to the submittals called for in the Technical Specifications and General Conditions, additional submittals are required for the following items: shoring plan, pipe, concrete mix design, asphalt mix design, metal fabrications, and equipment rental rates for all equipment to be utilized for the project (as required by Section 47.D.3 of the General Conditions).

E. Various items of Work

The Contractor shall provide the City reasonable and timely notice in writing prior to exceeding quantities established in the Bid Schedule. Failure to notify the City in a timely manner prior to exceeding the contractual quantities identified in the Bid Schedule shall be sufficient reason for the City to deny such claim.

Roadway specifications shall conform to City Code Sections 12.05.110 and 12.05.120.

Clearing and grubbing shall be subject to MAG specification Section 201 and full compensation shall be considered as provided in bid item "Mobilization". No separate payment shall be made for trees.

It is the contractor's responsibility to comply with the ADA, specifically the requirements of ADAAG, even if the project plans show an item to not meet the requirements of ADAAG.

The City of Sedona reserves the right to request a schedule of values for any of the lump sum bid items.

All guarantees shall be per Section 51 of the General Conditions.

If it is determined that import or export of earthen material in excess of 40 cubic yards (combined total) is needed, a Haul Plan shall be provided to the City Engineer. At least 5 city working days prior to the placement of fill or excavated material from a grading project within the city on other properties located within the city, Engineering Services shall be notified in writing of the intent to place the material on other property. This requirement shall apply when the total amount of material placed on other properties within the city exceeds 40 cubic yards or if the other property on which the fill is to be placed is located within 0.75 miles of Oak Creek, or lies within a city designated flood plain. The City Engineer may approve or deny permission to place such material.

The contractor shall provide copies of all required testing to Engineering Services.

The City reserves the right to require that payment requests be submitted in a format it approves.

The City may require information as necessary to verify proper work eligibility of persons, subcontractor, or others providing labor, equipment, material or services to this project. This may include but is not limited to social security numbers, driver's license numbers, and evidence of age or citizenship.

F. Permits

The Contractor shall be responsible for obtaining permits bearing on the work and adhere to provisions of said permits.

G. Utility Relocation

It shall be the responsibility of the Contractor to arrange and coordinate the relocation of any utilities found to be in conflict with the work. Utility relocation costs not identified as a bid item in the contract will be the City's responsibility.

H. Local Drainage

The Contractor shall reconstruct roadways, driveways, sidewalks, ditches and other surfaces at elevations that will ensure the drainage is improved or unchanged from the existing pre-construction conditions.

I. Required Inspection

Work requiring inspection includes the following: testing, asphalt preparation and placement, cleanup, rebar inspection, trench bedding placement and backfill compaction, pipe placement, and concrete formwork prior to pouring concrete.

J. Project Progress Payments

Payment of up to 20% of stored materials or equipment shall be made, upon request of the Contractor, pursuant to the requirements in General Condition Section 31.C.

K. Subcontractors

General Conditions Section 13.C. shall be revised to allow subcontractors to collectively perform no more than sixty-five percent (65%) of the value of the total work required. The Contractor shall self-perform thirty-five percent (35%) of the total contract work.

NOTICE OF AWARD

Date

Contractor Name.

Street or PO Box

City, State Zip

SUBJECT: NOTICE OF AWARD – WWRP INJECTION WELL NO. 1 & WELL NO. 2 EQUIPPING PROJECT

THE CITY OF SEDONA, HAVING DULY CONSIDERED THE BID SUBMITTED ON _____, 2015 FOR THE CITY OF SEDONA _____ AS OUTLINED IN THE CONTRACT DOCUMENTS AND DETAILED ON THE DRAWINGS, AND IT APPEARING THAT YOUR PROPOSAL FOR PERFORMING THE WORK IS FAIR, EQUITABLE, AND IN THE CITY'S BEST INTEREST, AND THE BID INCLUDES PRICE FOR WORK IN THE BID SCHEDULE IN THE ESTIMATED TOTAL AMOUNT OF \$ _____ SAID BID IS HEREBY ACCEPTED AT THE PRICES CONTAINED THEREIN, AND IN ACCORDANCE WITH ALL PROVISIONS SET FORTH IN THE CONTRACT DOCUMENTS.

In accordance with the terms of the Contract Documents, you are required to execute the formal Contract and furnish the required Performance and Payment Bonds within ten (10) consecutive calendar days from and including the date of receipt of this Notice.

In addition, you are requested to furnish at the same time, the required Owner's protective liability and property damage insurance policy, and certificates of insurance in triplicate evidencing compliance with the other requirements for insurance stated in the Contract Documents. Your certificates of insurance shall be accompanied by a letter from your insurance company stating that the insurance certificate meets the entire requirements of the specifications, or shall state and describe specific exclusions.

The Bid Bond submitted with your proposal will be retained until the Contract has been executed and the required Performance and Payment Bonds have been furnished and approved. In the event that you should fail to execute the Contract or furnish the Performance and Payment Bonds within the time limit specified, the City, at its discretion, may cash the Bid Bond and proceed with steps that are in the City's best interest.

RECEIVED AND ACCEPTED:

Contractor

By:

Name: _____

Date: _____

Enclosures (3) contracts

CITY OF SEDONA, ARIZONA

Sincerely,

J. Andy Dickey, P.E.,

Assistant Community Development Director/City Engineer

NOTICE TO PROCEED

Date

Contractor Name.
Street or PO Box
City, State Zip

Attention:

Subject: **NOTICE TO PROCEED - WWRP Injection Well No. 1 & Well No. 2 Equipping Project**

You are hereby authorized to proceed with work effective _____, 2015 and fully complete all work within _____ consecutive days from this date. The completion date for this Project is therefore _____, 2015. Liquidated damages of **\$ 1,070 per day** are applicable for each day past _____, 2015 for which work on this Project is not complete, unless an adjustment is authorized by a change order. Please acknowledge your receipt of this letter and agreement with the terms stated by signing in the space provided and returning to the City for our files.

CITY OF SEDONA, ARIZONA

BY: _____

J. Andy Dickey, P.E.
Assistant Community Development Director/City Engineer

Date: _____

Receipt
Acknowledged

By: _____

Date: _____

**City of Sedona
Engineering Services
Change Order**

This change order is not effective unless signed by the City Manager of the City of Sedona or his properly designated representative. Section 47 of the Contract General Conditions shall apply

THIS CHANGE ORDER CONSTITUTES FULL, FINAL, AND COMPLETE COMPENSATION TO THE CONTRACTOR FOR ALL COSTS, EXPENSES, OVERHEAD, PROFIT, AND ANY DAMAGES OF EVERY KIND THAT THE CONTRACTOR MAY INCUR IN CONNECTION WITH THE WORK DESCRIBED IN THIS CHANGE ORDER, INCLUDING ANY IMPACT ON THE DESCRIBED WORK OR ON ANY OTHER WORK UNDER THE CONTRACT, ANY CHANGES IN THE SEQUENCES OF ANY WORK, ANY DELAY TO ANY WORK, ANY DISRUPTION OF ANY WORK, ANY RESCHEDULING OF ANY WORK, AND ANY OTHER EFFECT ON ANY OF THE WORK UNDER THIS CONTRACT. BY THE EXECUTION OF THIS CHANGE ORDER, THE CONTRACTOR ACCEPTS THE CONTRACT PRICE CHANGE AND THE CONTRACT COMPLETION DATE CHANGE, IF ANY, AND EXPRESSLY WAIVES ANY CLAIMS FOR ANY ADDITIONAL COMPENSATION, DAMAGES OR TIME EXTENSIONS, IN CONNECTION WITH THE DESCRIBED WORK.

CHANGE ORDER NO. _____ **DATE:** _____
Project: **WWRP Injection Well No. 1 & Well No. 2 Equipping Project**
Contractor Name: _____
Brief description of change: _____

Plan Sheets #s affected by this change: _____
Specification Sections upon which Change Order based: _____
Change requested by (check one): City Contractor Both
Contract Time adjustment: _____
This contract change order **increases** **decreases** **the maximum estimated contract compensation per General Conditions Section 47 contract adjustments as follows:**

\$ _____	\$ _____	\$ _____	\$ _____	=	\$ _____
Method A	Method B	Method C	Method D		Total cost adjustment

Contract Compensation:
 Original contract amount _____
 This Change Order _____
 All previous Change Orders _____
 Total Maximum Compensation _____
 (including this change order)
The total Contract days based upon the same change orders is _____ **calendar days.**

CONTRACTOR - ACCEPTANCE BY: _____ DATE: _____	CITY OF SEDONA – ENGINEERING SERVICES APPROVED BY: _____ DATE: _____
--	---

CITY OF SEDONA - CITY MANAGER APPROVAL

 BY: _____
 DATE: _____

Attach a more complete description of the change and supporting documentation to this form. Form to be signed in three copies.

General Conditions

2015

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GENERAL CONDITIONS

1. CONTENTS

The following Contract Provisions are general in scope and may refer to conditions, which will not be encountered in the performance of the work, included in this Contract and which are not applicable thereto. Any requirements, provisions or other stipulation of these General Conditions, which pertain to a non-applicable condition, shall be excluded from the scope of the Contract. Where conflict appears, "Special Condition" shall take precedence over "General Conditions". Full compensation for compliance with these General Conditions shall be considered as included in the total and various bid items of the contract and the contract time.

2. DEFINITIONS AND TERMS

When the Contract indicates that work shall be "accepted, acceptable, approve, authorized, condemned, considered necessary, contemplated, deemed necessary, designated, determined, directed, disapproved, established, given, indicated, insufficient interpreted, ordered, permitted, rejected, required, reserved, satisfactory, specified sufficient, suitable, suspended, unacceptable, unsatisfactory," it shall be understood that these expressions are followed by the words "by the City of Sedona".

Wherever the following abbreviations, terms, or pronouns are used in the specifications, plans, or other Contract Documents, the intent and meaning shall be interpreted as follows:

ABBREVIATIONS

AAN	American Association of Nurserymen
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADOT	Arizona Department of Transportation
AGC	Associated General Contractors of America
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute, Inc.
ARA	American Railway Association
AREA	American Railway Engineering Association
ARTBA	American Road and Transportation Builders Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATSSA	American Traffic Safety Services Association
A WG	American Wire Gauge
AWPA	American Wood Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association

CRSI	Concrete Reinforcing Steel Institute
EIA	Electric Industries Association
FHWA	Federal Highway Administration, Department of Transportation
FSS	Federal Specifications and Standards
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IMSA	International Municipal Signal Association
IPCEA	Insulated Power Cable Engineers Association
ITE	Institute of Transportation Engineers
MAG	Maricopa Association of Governments
MIL	Military Specifications
MUTCD	Manual on Uniform Traffic Control Devices
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NIST	National Institute of Standards and Technology
NSF	National Sanitation Foundation (NSF)
SAE	Society of Automotive Engineers
UL	Underwriters Laboratories, Inc.

ADVERTISEMENT - A public announcement inviting proposals for work to be performed or materials to be furnished.

AWARD - The acceptance by the City of a proposal.

BASIS OF PAYMENT - The terms under which "work" is paid, as a designated pay item in accordance with the quantity measured and the pay unit.

BIDDER - Any individual, partnership, joint venture, firm or corporation submitting a proposal for the advertised work, acting directly or through a duly authorized representative.

CALENDAR DAY - Each and every day shown on the calendar, beginning and ending at midnight.

CERTIFIED INVOICE - An invoice from a supplier which has been reliably endorsed by the Contractor guaranteeing that the material was purchased and received for the project and establishing the value of the material.

CLAIM - A written demand or request for additional compensation or additional time submitted to the Engineer that:

- A. Contains the words "This is a claim...", within its Subject line or the first paragraph
- B. Cites the contractual basis for the demand or request
- C. Relates the Contractual basis cited to factual events occurring or that have occurred within the project.

COMPLETION DATE - The date on which the contract work is specified to be completed

CONTRACT ITEM (PAY ITEM) - A specifically named unit of work for which a price is provided in the Contract. The description, whether general or detailed, the content of the named unit of work shall be as per the project plans and specifications.

CONTRACT CHANGE ORDER - A written order issued to the Contractor by the City covering extra work, additions or alterations to the plans and specifications, and establishing the basis of payment and time adjustment for the work affected by the changes. The Contract Change Order is the only method authorized for changing the Contract.

CONTRACT DOCUMENTS - The following comprise the Contract Documents: Advertisement for Bids, Information for and Instructions to Bidders, Bid Proposal and Bid Guarantee Bond, Construction Contract, Change Orders, Addenda, Performance Bond, Labor and Material Payment Bond, Special Conditions, General Conditions, Technical Specifications, Notice of Award, Notice to Proceed, Drawings, Plans, Standard Specifications and Certificate of insurability. All of these documents together constitute the **CONTRACT**.

CONTRACT TIME - The number of calendar days allowed for the entire completion of the Contract, including authorized time extensions and work required to be complete after substantial completion. Where a calendar date of completion is specified, the Contract shall be completed on or before that date.

CONTRACTOR - Party contracting directly with the City to furnish and perform all work and services in accordance with the Contract Documents.

COUNTY - The County in which the work is to be done.

DAY - Unless otherwise defined shall mean "calendar" day.

ENGINEER - The City Engineer; or his designated representative.

EXTRA WORK - Work not provided for in the Contract as awarded but determined by the City to be essential to the satisfactory completion of the Contract within its intended scope.

FINAL ACCEPTANCE - The acknowledgment by the City that the project or the work has been completed in accordance with the Contract Documents and provides the date at which the warranty or guarantee period begins.

INSPECTOR - A person, persons, or firm authorized by the Engineer to make detailed reviews, observations, reports and determinations of contract performance.

MAY - Used to refer to permissive actions.

METHOD OF MEASUREMENT - The manner in which a pay item is measured to conform with the pay unit.

NOTICE OF CLAIM - A written notification submitted to the Engineer that a demand or request for additional compensation or additional time may be made. The notification shall

1. Contain the words "notification of a potential claim" within its Subject line or the first paragraph
2. Describe the occurrence which is the reason that the Notice of Claim is being presented

NOTICE TO PROCEED - Written notice to the Contractor to proceed with the contract work including, when applicable, the date of beginning of contract time. Start of Construction, as defined below, may start at a later date.

PLANS - The drawings and pictures depicting the location and special orientation of the work to be done.

PROJECT - The work to be completed pursuant to this contract.

PROPOSAL - A standard form plus information supplied by the City, which contains spaces for completion by the Bidder which, when completed in its entirety and executed by the Bidder, along with all required additional documents, shall constitute the Bid. Said Bid shall constitute the Contractor's offer to perform all work required as set forth in the Contract Documents for the amount of money stated in the Bid.

PROPOSAL FORM - The documents furnished by the City on which the offer of a bidder is submitted.

PROPOSAL GUARANTY - The security furnished with a proposal to Guaranty that the bidder will enter into the Contract if the proposal is accepted.

RIGHT OF WAY - A general term denoting land, property, or interest therein, acquired for or devoted to the construction of an improvement.

SALVABLE MATERIAL - Material that can be saved or salvaged. Unless otherwise designated or directed by the City or shown on the plans, all salvable material shall become the property of the Contractor.

SAMPLES - Samples are physical examples furnished or constructed by the Contractor to illustrate materials, equipment, workmanship or finishes, and to establish standards by which the work will be judged.

SHALL - Refers to mandatory actions by either the Contractor or the City.

SHOP DRAWINGS - Drawings, diagrams, illustrations, certificates, test reports, schedules, performance charts, brochures, shop layouts, fabrication layouts, assembly layouts, foundation layouts, wiring and piping layouts, specifications and descriptive literature required by the Contract Documents which the Contractor is required to submit for approval.

START OF CONSTRUCTION – The date in which the Contractor begins physical work at the project site. Restrictions on start of construction are provided in the General Conditions and may be specified in the Special Conditions.

SUBCONTRACTOR - Party supplying labor and/or material for work at the site of the project for, and under separate contract or agreement with, the Contractor. Nothing contained in the Contract Documents shall create any contractual relationship between the City and any subcontractor.

SUBSTANTIAL COMPLETION - The date when the work is sufficiently completed so it may be safely, conveniently, and beneficially utilized by the City for all of the purposes for which it

was intended. Reduced liquidated damages are chargeable for a project or portions thereof which have separately specified damages, if there are items of work remaining to be performed relative to such work once full substantial completion status has been attained. In such cases the amount of liquidated damages due shall be twenty-five percent (25%) of the unreduced liquidated damage amount stated in the contract.

SUPERINTENDENT - The Contractor's authorized representative in charge of the work.

WORK - The furnishing of all labor, materials, equipment, and all other incidentals necessary to the successful and acceptable completion of all obligations as described in the Contract Documents, and the carrying out of all of the duties and obligations imposed by the Contract.

3. CONTRACTOR'S UNDERSTANDING

- A. It is understood and mutually agreed that by submitting a proposal, the Contractor acknowledges that he has carefully examined all documents pertaining to the work, the locations, accessibility, and general character of the site of the work and all existing buildings and structures within and adjacent to the site, and has satisfied himself as to the nature of the work, the condition of existing buildings and structures, the conformation of the ground, subsurface conditions, the character, quality, and equipment, machinery, plant, and any other facilities needed preliminary to and during prosecution of the work, the general and local conditions, the construction hazards, and all other matters, including but not limited to any labor situation which can in any way affect the work under the Contract. It is further mutually agreed that by submitting a proposal, the Contractor acknowledges that he has satisfied himself as to the feasibility and correctness of the Contract Documents for the construction of the work and that he accepts all the terms, conditions, and stipulations contained therein; and that he is prepared to work in peace and harmony with other Contractors performing work on the site.
- B. No verbal agreement or conversation with any officer, agent, or employee of the City, either before or after the execution of the Contract, shall affect or modify any of the terms, conditions, or other obligations set forth in any of the Contract Documents.
- C. The Contractor understands that, unless specifically stated otherwise in the contract documents, the intent of the contract documents is to provide complete and operable facilities. The Contractor's bid amount for this project, therefore, shall be and is considered to be for completion in conformity with this understanding, regardless of whether some aspect of the work to be performed is named as a separate bid item or not.

4. DEFECTIVE WORK

- A. A City Representative, designated by the City Engineer, shall give written notice of the noncompliance to the Contractor, when, and as often as the City Representative determines through his inspection that procedures, material, equipment or workmanship incorporated in the Project does not meet the requirements of the Contract. Within five (5) working days from the receipt of such notice, the Contractor shall undertake the work necessary to correct such deficiencies, and to bring the work into compliance with the Contract Documents. Should the Contractor not agree with the City Representative's determination, and as a condition precedent to any request for either additional compensation or time extension, or both, resulting from the City Representative's determination, the Contractor shall within

three (3) working days provide a Notice of Claim to the Engineer that he may claim additional compensation, time or both, and detailed explanation of the Contractor's position. The Contractor shall document the costs associated with the corrective work with daily records and cost data and shall furnish such information to the Inspector daily. Receipt of cost data shall not be construed to be an acceptance of the corrective work, or an authorization for a Change Order to cover the corrective work. Failure by the Contractor to provide the specified written notice of an intention to make a claim shall be sufficient basis to reject any related claim subsequently submitted.

- B. Prior to initial acceptance of the Project, the City may, at its option, retain work, which is not in compliance with the Contract if the City determines that such defective work is not of sufficient magnitude or importance to make the work dangerous or undesirable. The City also may retain defective work, if in the opinion of the Inspector, and with concurrence of the City Engineer, removal of such work is impractical or will create conditions, which are dangerous or undesirable. Just and reasonable value, for such defective work, shall be judged, by the Engineer and appropriate deductions shall be made in the payments due, or to become due to the Contractor. Initial acceptance shall not act as a waiver of the City's right to recover from the Contractor an amount representing the deduction for retention of defective work.

5. NOTICE AND SERVICE THEREOF

Where the manner of giving notice is not otherwise provided for in the Contract Documents, any notice to the Contractor from the City relative to any part of the Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted to the Contractor at the address given in the Contractor's proposal, or at the last business address known to the City, or delivered in person to the Contractor or his authorized representative on the site or transmitted electronically by facsimile or electronic mail using phone numbers and addresses last provided by the Contractor. It is mutually agreed that such notice shall be sufficient and adequate. The Contractor shall provide the City, upon written request, facsimile phone numbers and electronic mail addresses, in writing.

6. MATERIAL AND EQUIPMENT SPECIFIED BY NAME

When material or equipment is specified by reference to one or more patents, brand names, or catalog numbers, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements, and that other materials or equipment, of equal capacities, quality and function may be considered. The Contractor may offer material or equipment of equal or better quality and performance in substitution for those specified which he considers would be in the City's interest to accept. After the Award of the Contract, the City will consider offers for substitution only from the Contractor and will not acknowledge or consider such offers from suppliers, distributors, manufacturers, or Subcontractors.

Substitutions

The Contractor's offer of substitution shall be made in writing to the Engineer and shall include sufficient data to enable the Engineer to assess the acceptability of the material or equipment for the particular application and requirements. If the offered substitution necessitates changes to or coordination with other portions of the work, the data submitted shall include drawings and details showing such changes. Contractor agrees to perform these changes as part of the

substitution of material or equipment. Within thirty (30) calendar days after the receipt of the offer of substitution, the Engineer will review the material submitted by the Contractor and notify the Contractor if approved for use or objections, if any, to the proposed substitution or if further information is required. Upon notification by the Engineer, the Contractor shall either provide the approved material or equipment, which complies with project specifications, or furnish requested additional information. While the Engineer might not take any objections to the proposed substitution and may approve the same, such action shall not relieve the Contractor from responsibility for the efficiency, sufficiency, quality and performance of the substitute material or equipment, in the same manner and degree as the material and equipment specified by name. Any cost differential associated with a substitution shall be reflected in the Contractor's offer of substitution and the Contract Documents shall be modified by a Change Order.

When the specifications state the construction shall be performed by the use of certain methods and equipment, such methods and equipment shall be used unless other methods are authorized by the Engineer. If the contractor desires to use a method or type of equipment other than those specified, he may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the method and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given it will be on the condition that the Contractor will be fully responsible for producing construction work in conformity with the Contract Documents. If material or equipment is specified by only one patent or proprietary name, or by the name of only one manufacturer, it is for the purpose of standardization, or because the City knows of no equal. If standardization is the reason for using one name to specify any material or equipment, the specifications will so state, and substitutions will not be considered. In other cases, the Contractor may offer substitutions in the same manner as requesting a Change Order for products he considers being equal to those specified.

7. CONTRACT BONDS AND GUARANTEES

- A. The Contractor shall provide two surety bonds on the forms provided, each in an amount equal to 100% of the contract price. One shall serve as security for the faithful performance of the work and the other as security for the faithful payment and satisfaction of the persons furnishing materials and performing labor on the work. The bonds shall be issued by a corporation duly and legally licensed to transact surety business in the State of Arizona. Such bonds shall remain in force throughout the period required to complete the work and thereafter for a period of 365 calendar days after final acceptance of the work, plus 365 calendar days following the repair of any work pursuant to the guarantees herein made. The surety's liability on the bonds shall not exceed the underwriting limitations for the respective surety specified in Circular 570, published by the United States Department of the Treasury.
- B. Should any surety or sureties be deemed unsatisfactory at any time by the City, notice will be given to the Contractor to that effect and he shall forthwith substitute a new surety or sureties satisfactory to the City. No further payment shall be deemed due or will be made under this Contract until the new surety shall qualify and be accepted by the City.
- C. The Contractor guarantees to the City that all materials and equipment furnished under this Contract will be new and of good and sufficient quality, free from faults and defects as is necessary to complete the project as required by the Plans and Specifications.

8. INSURANCE

- A. The Contractor, at Contractor's own expense, shall purchase and maintain the herein stipulated minimum insurance with companies duly licensed, possessing a current A.M. Best, Inc. Rating of B+6, as minimum and approved and licensed to do business in the State of Arizona with policies and forms satisfactory to the City.
- B. All required insurance herein shall be maintained in full force and effect until all work required to be performed under the terms of the Contract is satisfactorily completed and finally accepted - failure to do so may, at the sole direction of the City, constitute a material breach of this Contract.
- C. The Contractor's insurance shall be primary insurance, and any insurance or self-insurance maintained by the City shall not contribute to it.
- D. Any failure to comply with the claim reporting provisions of the policies or any breach of an insurance policy warranty shall not affect coverage afforded under the policy to protect the City.
- E. The policies, except Workers' Compensation, shall contain a waiver of transfer rights of recovery (subrogation) against the City, its agents, officers, officials and employees for any claims arising out of the Contractor's work or service.
- F. The insurance policies may provide coverage, which contains deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to the City under such policies. The Contractor shall be solely responsible for deductible and/or self-insured retention and the City, at its option, may require the Contractor to secure the payment of such deductible or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.
- G. The City reserves the right to request and to receive, within ten (10) working days, certified copies of any or all of the herein required insurance policies and/or endorsements. The City shall not be obligated, however, to review same or to advise Contractor of any deficiencies in such policies and endorsements, and such receipt shall not relieve Contractor from, or be deemed a waiver of, the City's right to insist on strict fulfillment of Contractor's obligations under this Contract.
- H. The insurance policies, except Workers' Compensation, required by this Contract shall name the City, its agents, officers, officials and employees as additional insured.
- I. The making of progress payments to the Contractor shall not be construed as creating an insurable interest by or for the City or be construed as relieving the Contractor or his Subcontractors of responsibility for direct physical loss, damage or destruction occurring prior to final acceptance.
- J. Any insured loss under the policies of insurance required by this Agreement shall be adjusted with the City and made payable to City for the insured, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph K of this Article of these General Conditions. City shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged work shall be repaired or replaced, the

moneys so received shall be applied on account thereof, and the work and the cost thereof shall be covered by an appropriate Change Order.

- K. City shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within ten (10) working days after the occurrence of loss to City's exercise of this power. If such objection were made, City shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If required in writing by any party in interest, City shall upon the occurrence of an insured loss, give bond for the proper performance of these duties
- L. If City finds it necessary to occupy or use a portion or portions of the work prior to substantial completion of all of the work, such use or occupancy may be accomplished as provided in these General Conditions, provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or lapse on account of any such partial use or occupancy.

M. REQUIRED COVERAGE

The Contractor shall obtain for itself and provide the City with Certificates of Insurance indicating the scope and extent of coverage as set forth below. Required coverage's may be modified by an amendment to the Contract Documents.

1. GENERAL LIABILITY

Contractor shall maintain Commercial General Liability insurance with a limit of not less than \$3,000,000 for each occurrence with a \$3,000,000 Products and Completed Operations Aggregate and \$3,000,000 General Aggregate Limit. The policy shall include coverage for bodily injury, broad form property damage, personal injury, products/completed operations and blanket contractual coverage including, but not limited to, the liability assumed under the indemnification provisions of this Contract, which coverage will be at least as broad as Insurance Service Office, Inc. Policy Form CG 000211093 or a11y replacement thereof. The coverage shall not exclude X, C, U.

Such policy shall contain a severability of interest provision, and shall not contain a sunset provision or commutation clause, or any provision, which would serve to limit third party action over claims.

The Commercial General Liability additional insured endorsement shall be at least as broad as the Insurance Service Office, Inc.'s, Additional Insured, Form B, CG20101185, and shall include coverage for Contractor's operations and products and completed operations.

If required by this Contract, the Contractor subletting any part of the work, services or operations awarded to the Contractor shall purchase and maintain, at all times during prosecution of the work, services or operations under this Contract, an Owner and Contractor's Protective Liability insurance policy for bodily injury and property damage, including death, which may arise in the prosecution of the Contractor's work, service or operations under this Contract. Coverage shall be on an occurrence basis with a limit not

less than \$3,000,000 per occurrence, and the policy shall be issued by the same insurance company that issues the Contractor's Commercial General Liability Insurance.

2. AUTOMOBILE LIABILITY

Contractor shall maintain Commercial Business Automobile Liability insurance with a combined single limit for bodily injury and property damage of not less than \$1,000,000 each occurrence and \$2,000,000 for more than one person and property damage in the sum of not less than \$1,000,000 resulting from any one accident which may arise from the operation, actions or omissions of the Contractor or any Subcontractor in the performance of the project, and with respect to the Contractor's owned, hired, and non-owned vehicles assigned to or used in performance of the Contractor's work. Coverage will be at least as broad as coverage code 1, "any auto", (Insurance Service Office, Inc. Policy Form CA 00011293, or any replacements thereof). Such insurance shall include coverage for loading and offloading hazards. If hazardous substances, materials or wastes are to be transported, MCS 90 endorsement shall be included and \$5,000,000 per accident limits for bodily injury and property damage shall apply.

3. WORKERS' COMPENSATION

The Contractor shall carry Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of the work; and, Employer's Liability insurance of not less than \$1,000,000 for each accident, \$1,000,000 disease for each employee, and \$1,000,000 disease policy limit.

In case any work is subcontracted, the Contractor will require the Subcontractor to provide Workers' Compensation and Employer's Liability to at least the same extent as required of the Contractor.

The Contractor shall furnish the City with a Certificate of Waiver of Subrogation under the terms of the Workmen's Compensation insurance. The Contractor shall defend, protect, and save harmless the City from and against all claims, suits, and actions arising from failure of the Contractor or the Subcontractor to maintain such insurance.

4. BUILDERS' RISK (PROPERTY) INSURANCE

The Contractor shall purchase and maintain, on a replacement cost basis, Builders' Risk insurance in the amount of the initial Contract Amount as well as subsequent modifications thereto for the entire work at the site. Such Builders' Risk insurance shall be maintained until final payment has been made or until no person or entity other than the City has an insurable interest in the property required to be covered, whichever is earlier. This insurance shall include interests of the City, the Contractor, and all Subcontractors and Sub-Subcontractors in the work during the life of the Contract and course of construction, and shall continue until the work is completed and accepted by the City. The insurance shall cover work performed under the Contract and materials, equipment or other items to be incorporated therein, while the same are located at the construction site, stored off-site, or at the place of manufacture. The policy shall cover not less than losses due to fire, mischief, weather, vandalism, malicious mischief, wind, collapse, riot, aircraft, smoke or any other casualty, including but not limited to earthquakes, tornadoes or other cataclysmic events, until the date of initial acceptance of the work. For new construction projects, the Contractor agrees to assume full responsibility for loss or damage to the work being performed and to the buildings under

construction. For renovation construction projects, the Contractor agrees to assume responsibility for loss or damage to the work being performed at least up to the full Contract Amount unless otherwise required by the Contract Documents or amendments thereto.

Builders' Risk insurance shall be on an all-risk policy form and shall also cover false work and temporary buildings and shall insure against risk of direct physical loss or damage from external causes including debris removal, demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's service and expenses required as a result of such insured loss and other "soft costs" as required by the Contract.

Builders' Risk insurance must provide coverage from the time any covered property becomes Contractor's control and/or responsibility, and continue without interruption during construction or renovation or installation, including any time during which the covered property is being transported to the construction installation site, and while on the construction or installation site awaiting installation. The policy will provide coverage while the covered premises or any part thereof are occupied. Builders' Risk insurance shall be primary and not contributory.

If the Contract requires testing of equipment or other similar operations, at the option of the City, the Contractor will be responsible for providing property insurance for these exposures under a Boiler Machinery insurance policy.

The maximum deductible allowable under this policy shall be \$5,000. The policies providing this insurance shall name the City, its agents and attorneys, the City Engineer, and the Design Engineer as additional insured as their respective interests shall appear.

5. **BLASTING INSURANCE:**

If the Contractor determines that the performance of the project will require use of explosives, the public liability and property damage insurance shall specifically cover all liability arising out of the Contractor's acquisition, storage and use of explosives. If work requiring use of explosives is not discovered until after the commencement of the work, upon discovery, the Contractor shall immediately procure blasting insurance as required by this paragraph. The Contractor shall not undertake any blasting without submission to the City of a Certificate of Insurance covering all liability due to blasting regardless of amount. Any delays incurred by the Contractor in procuring blasting insurance shall not be grounds for an extension of time for completion of the project, nor for any additions to the contract price.

6. **OTHER INSURANCE:**

The Contractor shall carry and maintain all other insurance including Flood Insurance as may be required by Federal, State, County and City laws or ordinances. The Contractor may be required to, at the discretion of the City, maintain additional fire and extended coverage with an endorsement for vandalism and malicious mischief in his name and also in the name of the City in an amount of not less than \$100,000.00.

The Contractor may utilize up to \$2,000,000 in excess liability coverage to meet the above-required limits for insurance. Any deductibles shall be declared and the City may require deposits be made to it up the amount of such deduction, at its sole discretion.

7. CERTIFICATES OF INSURANCE

Prior to commencing Services under this Contract, Contractor shall furnish the City with Certificates of Insurance, or formal endorsements as required by the Contract, issued by Contractor's insurer(s), as evidence that policies providing the required coverage's, conditions and limits required by this Contract are in full force and effect.

All Certificates of Insurance required by this Contract shall be identified with a bid serial number and title. A \$25.00 administrative fee shall be assessed for all Certificates received without the appropriate bid serial number and title. Each of the Certificates of Insurance shall contain a clause substantially in the following words:

It is hereby understood and agreed that if this policy is canceled, a written notice of such cancellation shall be mailed to the City of Sedona within ten (10) working days.

Such insurance coverage obtained by the Contractor other than Workmen's Compensation Coverage, shall name the City, the City Engineer, the Design Engineer, and their directors, officers, principals, agents, attorneys, and employees as Additionally Insured.

Insurance evidenced by these certificates shall not expire, be canceled, or materially changed without fifteen (15) days prior written notice to the City.

All certificates of insurance and endorsements required to be purchased by Contractor pursuant to this Article shall be filed with the City. Certificates shall be acceptable to City. If a policy does expire during the life of the Agreement, a renewal certificate of the required coverage must be sent to the City not less than five days prior to expiration date.

Each certificate of insurance shall include the job site and project number. Coverage shown on certificate of insurance must coincide with the requirements in the text of the Contract Documents.

9. SCHEDULE OF CONSTRUCTION

- A. The Contractor shall submit to the City within five (5) days after award of Contract, or as may be otherwise requested by the City, a schedule showing the order in which the Contractor proposes to carry on the work and at a rate sufficient to successfully construct all of the Work set forth in the Contract Documents within the Contract Period. Such schedule shall show the dates at which the Contractor will start and complete the several parts of the Work. The schedule shall identify the following items if applicable:

1. Potholing.
2. Mobilization.
3. Roadway work to be broken down at a minimum, on a street by street basis.
4. Pipeline work to be broken down on a manhole to manhole basis and individual pump station construction or abandonment.
5. Site prep.
6. Drainage improvements prep and construction.
7. Ramp prep, construction and finish.
8. Sidewalk prep, construction and finish.

9. Bridge prep, abutment construction, bridge construction, bridge placement, and finish.
10. Traffic control.
11. Demobilization
12. SWPPP.
13. Other items as applicable and/or listed in the bid schedule.

The schedule shall also show the order of construction and delivery dates at which the Contractor will start and complete the several other parts of the Work, the order of construction and delivery dates of critical materials and equipment along with monthly payment estimates, dates for submittal of working drawings and shop drawing to the Engineer for review, and the name of the project superintendent. The City shall be notified in writing of changes in the project superintendent. The schedule shall be subject to review and comment by the City as per MAG specifications section 108.4. The schedule shall be binding on the Contractor and shall be complied with by the Contractor unless, for good cause shown, a modification of the schedule shall be requested in writing to and approved by the City. The schedule shall also:

1. Be updated with each progress billing.
2. Include a detailed two week look ahead, indicate work requiring inspection, and be updated at each progress meeting.
3. Show work tasks progress in time periods of seven days or less unless otherwise approved by the Engineer.
4. Identify the critical path(s) for the work and task float.
5. Identify tasks corresponding to bid item descriptions when possible. Less comprehensive task designations may be used to comply with 2 above.
6. Conform to any time and location constraints identified in permits and the contract documents.
7. Span the current contract date to the end of the contract time.
8. Be submitted in an electronic format compatible with Microsoft Project Standard 2007, and hard copy format.
9. Identify long lead items.

The schedule format (size, color, type format) shall be such that the different tasks, durations, critical path and durations can be easily distinguished. The Contractor shall also provide a listing of tasks and durations with the schedule. If the schedule and list is being provided prior to a Notice to Proceed it need not include dates for start and completion of tasks. Any schedule and list provided after the Notice to Proceed has been issued shall include dates. A schedule and list shall be provided on the date of the Notice to Proceed. The Contractor shall begin work on the project site within five (5) working days of the Notice to Proceed, unless stated otherwise in specifications. Failure to do so is sufficient cause for termination in addition to other remedies the City may have.

- B. Where the City's operations require specific sequencing of the work, such sequencing requirements as provided for in the Contract Documents shall be followed.
- C. When progress has not kept pace within two weeks of the schedule or if otherwise requested by the City the Contractor shall update his schedule within five (5) working days of the City's written request. The revised schedule will include a description of what actions will be done by the Contractor to bring the project back on schedule. **Failure to**

not provide a revised schedule within one week of its request may result in the withholding of \$750 from any progress payment due. Each written request by the City shall be considered a separate request and subject to the withholdings specified, provided it is within the following billing cycle from a previous request.

- D. The Contractor shall provide the City with a list of emergency phone numbers, addresses, pager numbers, facsimile numbers, and electronic mail addresses for contacting key personnel in the case of any after-hours emergency.
- E. The Contractor shall furnish the City with a schedule for hours of work. In it the Contractor shall note the begin work, begin daily clean-up and daily shutdown times to be followed by the Contractor during the project unless otherwise changed. The Contractor's regular work hours on regular workdays shall be between 7:00 AM and 5:30 PM Monday thru Friday unless otherwise stated in the specifications. This work hours time frame shall be considered to include start-up of equipment and daily clean-up of the work area. Weekends and Holidays for the City of Sedona shall be considered non-regular work hours. Permission to work non-regular work hours shall be subject to approval by the Engineer and the provisions of General Conditions, Section 39. **The Engineer may deduct \$250 per day for work outside of approved work hours after issuance of one written warning during the course of the project.**

The City of Sedona has the following holiday schedule:

New Year's Day, January 1st

Martin Luther King/Civil Rights Day, 3rd Monday of January

President's Day, 3rd Monday in February

Memorial Day, Last Monday in May

Independence Day, July 4th

Labor Day, 1st Monday in September

Veteran's Day, November 11th

Thanksgiving Day, 4th Thursday in November AND the Friday after Thanksgiving Day

Christmas Day, December 25th

10. PROGRESS MEETINGS

Periodic meetings shall be held between the City of Sedona officials, Contractor, and other affected agencies, at a standard time and place, and at a frequency to be established during the pre-construction meeting. These meetings shall be used to discuss scheduling and matters related to the project.

11. TAXES

The Contractor shall be responsible for and shall include in his bid prices all applicable taxes, including but not limited to Federal, State, and Local Taxes.

12. ASSIGNMENTS

The Contractor shall not assign the whole or any part of the Contract or any monies due or to become due hereunder without the written consent of the City and of the Surety on the Contractor's Bond. A copy of such consent of Surety, together with a copy of the assignment, shall be filed with the City. If the Contractor assigns all or any part of any monies due or to

become due under the contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims and liens of all persons, firms, and corporations for services rendered; for the payment of all materials and equipment furnished and for payment of all materials and equipment used or rented in the performance of the Work called for in the Contract; and for the payment of any liens, claims, or amounts due the Federal, State, or local government or any of their funds.

13. SUBCONTRACTING

- A. Subcontractors will not be recognized as employees or agents of the City, nor as having any privity of contract with the City. All persons engaged in the work of construction will be considered by the City to be employees of the Contractor. The Contractor will be held responsible for their work and for all materials provided by them, which shall be subject to the provisions of the Contract.
- B. Each subcontract shall contain a suitable provision for cancellation or termination thereof should the Subcontractor neglect or fail to conform to every provision of the contract.
- C. Subcontractors collectively shall not perform more than fifty percent (50%) of the value of the total work required pursuant to the Contract Documents. **The Contractor agrees that should this percentage be exceeded the City may consider the Contractor in breach of this contract and/or make deductions equal to one half of one percent of the total approved contract value for each one percent of subcontracted work beyond that allowed above.** The Contractor shall perform fifty percent (50%) of the contract work using the Contractor's own organization as construed in ADOT Standard Specifications 2000 Section 108.01.
- D. The City of Sedona encourages all contractors to utilize minority and women owned businesses whenever possible.

14. COOPERATION AND COLLATERAL WORK

- A. In general, the Contractor shall be responsible for the scheduling and coordination of his work with any other work, which may be, carried on in the construction areas for this project by other parties or by the City simultaneously with his construction work. The contractor shall include in his bid any costs, which may be involved on his part as a result of coordinating his construction with such other activity.
- B. \When two or more Contractors are employed by the City in related or adjacent work, each shall conduct his operations in such manner as to not cause any delay or hindrance to the other and shall properly connect and coordinate the execution of their respective work with the other. The City will not be responsible for damage caused by such delays, and such delays will not entitle the contractor(s) to an extension of time. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work.

If the proper execution of any part of the Contractor's work depends upon the work of any other Contractor, the Contractor shall inspect and promptly report to the City Engineer any discrepancies between the executed work and the drawings or any defects in such work that render it unsuitable for such proper execution. The failure of the Contractor to inspect and

report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of his own work. The exception is for defects, which may develop in the other contractor's work, after the execution of the Contractor's collateral work that would not have been discovered before the Contractor's collateral work began.

- C. The contractor shall coordinate his work, and cooperate with any other persons or entities operating on or adjacent to the site of the project.

Where persons employed by other persons or entities are engaged in or near the construction areas for this project, and where such work on the part of said parties results in a delay in performance by the Contractor, and where such delay, in the opinion of the City Engineer, is of such nature that it could not have reasonably been foreseen or anticipated by the Contractor in time for him to take steps to prevent same, then the Contractor shall be entitled to an extension of time.

The Contractor shall promptly make good any injury or damage caused by him that may be sustained by other Contractors or employees of the City. The Contractor shall join his work to that of others and perform his work in proper sequence in relation to that of others.

15. LINES AND GRADES

The Contractor shall be responsible for providing all construction staking and surveying needed to construct the facilities in accordance with the Plans and Specifications, and shall include such costs in his bid for the applicable items of work. The Contractor shall employ a surveyor licensed in the State of Arizona to perform all surveying necessary to construct this project to the lines and grades provided in the plans. The Contractor shall provide to the Engineer the Surveyor's listing of lines, grades, distances, curve information and point data (including northing, easting and elevation) used to actually establish project staking at least two working days prior to establishing subgrade, setting forms, placing pre-cast facilities, pouring concrete, installing pipe, or placing asphalt. The Contractor shall provide a set of as-built plans showing manhole and inlet inverts, rim and grate elevations, gutter elevations at 50-foot intervals, changes of grade, invert and finished grade elevations of concrete structures at the center and corners, and the inlet and outlet ends of pipes. The surveyor shall seal and designate them as as-built plans. This as-built plan is in addition to the Status As-Built and Record As-Built required under other provisions of these specifications. The Final contract payment shall not be due until all as-built plans have been submitted and accepted. Any work performed without complying with the Survey requirements in these specifications shall be considered unauthorized work and subject to the provisions of MAG section 105.11. As-Built plans shall be submitted in the following formats: hard copy in the same size as provided by the City to the Contractor for the contract, AutoCAD 2006, and .pdf.

The Contractor shall pothole utility facilities and report results to the Engineer at least two (2) working days prior to excavating for installation of roadways, asphalt patches, catch basins, underground pipes, manholes, footings, vaults, and basins. The report shall indicate any conflicts or inadequate clearances as related to the work to be performed. Failure to perform potholes and report results, as required, will result in the loss of the right to make a claim for changes in compensation and time due to conflicts, interference, protection or other costs related to the utility, as such, a claim would have been mitigated by performing the pothole timely.

16. EXCAVATIONS, UNDERGROUND FACILITIES LOCATION, AND STORMWATER POLLUTION PREVENTION.

The Contractor in the execution of the Work shall conform to all applicable Federal and State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over employment discrimination, wages and working conditions, and the construction of the Work, including but not limited to all construction codes, O.S.H.A. Requirements, and safety codes, which may apply to (1) performance of the Work; (2) protection of adjoining and adjacent property; (3) maintenance of passage-ways, guard fences or other protective facilities; and shall obtain all permits and pay for licenses and approvals necessary for the construction of the Work and give all required notices.

ARS-40-360.22 Excavations: Determining locations of underground facilities; providing information. This statute requires that no person shall begin excavation before the location and marking are complete or the excavator is notified that marking is unnecessary and requires that upon notification, the owner of the facility shall respond as promptly as practical, but in no event later than two working days. The “Blue Stake Center” (1-800-782-5348) was formed to provide a more efficient method of compliance with this statute.

ARS-40-360.23 Making excavations in careful, prudent manner: liability for negligence. This statute states that obtaining information as required does no excuse any person making any excavation from doing so in a careful and prudent manner nor shall it excuse such persons from liability for any damage or injury resulting from his negligence.

ARS-40-360.28 Civil penalty: Liability. If the owner or operator fails to locate, or incorrectly locates the underground facility, pursuant to this article, the owner or operator becomes liable for resulting damages, costs and expenses to the injured party.

Licenses and Permits:

The Contractor shall be required to obtain, at his expense, the appropriate licenses and permits from the City of Sedona before the start of construction. It is the duty of the Contractor to determine that all necessary permits have been obtained. Costs associated with obtaining a license are not waived.

Arizona Pollutant Discharge Elimination System (AZPDES) Permit

A. General requirements:

The Contractor shall comply with the AZPDES Stormwater requirements for construction sites pursuant to the requirement of the Arizona Department of Environmental Quality (ADEQ). The Contractor shall be designated as permittee and shall be responsible for providing the necessary labor and materials, and for taking the appropriate measures to assure compliance with the ADEQ requirements, as well as other Federal, State and local requirements pertaining to storm water discharges. As the permittee, the contractor is responsible for completing, in a manner acceptable to the ADEQ, all documents required including the following:

1. Storm water Pollution Prevention Plan (SWPPP) for the project including certification form. The contractor will be required to submit for approval, update and revise the SWPPP as necessary throughout the construction of the project in order to assure compliance with permit requirements. The completed SWPPP shall be kept on the project

site at all times during construction of the project.

2. Notice of Intent (NOI) to be covered by Arizona General Permit for Arizona including certification of signature.
 3. Notice of Termination (NOT) of coverage under AZPDES (upon project completion).
- B. Regardless of whether compliance with AZPDES is required the Contractor shall prepare a Storm Water Pollution Prevention Plan. That Plan shall at a minimum address the following issues:
- Designation, maintenance and clean-up of vehicle storage, fueling, lubrication and maintenance areas
 - Clean up and off-site disposal of excess construction materials including asphalt, concrete, paints, oils, and wrapping materials
 - Daily work day clean-up of debris in work area
 - Prevention of wind born debris/Dust Control Plan
 - Prevention of erosion resulting from rain or watering activities'
 - Measures to prevent silt and debris generated by this project from migrating beyond the construction site boundaries. Measures such as trapping and removing debris and dirt generated, or other measures acceptable to the Engineer, shall be taken.
 - The Contractor shall comply with the City of Sedona General Storm Water Pollution Prevention Guidelines, this includes filing the City Notice of Intent.

C. Submittals:

1. Preliminary copies of the NOI and SWPPP shall be submitted to the Engineer two days prior to the preconstruction meeting. Any necessary revisions to the SWPPP shall be subject to review by the Engineer, prior to implementation.
2. The Contractor shall submit completed, signed NOI forms at least forty-eight (48) hours prior to the initial start of construction on the project to the Arizona Department of Environmental Quality in Phoenix, Arizona (ADEQ, 1110 West Washington Street, Phoenix, AZ. 85007). Generally projects of less than one (1) acre may not be applicable to this requirement at this time. If the project is subject to these requirements, the Contractor shall be designated the permittee.
3. Failure by the contractor (or any of its appropriate subcontractors) to submit the NOI forms within the required time frame shall result in delay of the start of construction, but shall not prohibit issuance of the Notice to Proceed, at the City's sole discretion. A copy of the completed NOI shall be posted on the construction and a copy of the SWPPP shall be kept on the construction site.

Contractor's Responsibilities:

1. It is the Contractor's responsibility to perform inspection of all storm water pollution control devices on the project on a monthly basis and following each rainfall. The contractor shall prepare reports on these inspections and retain these reports for a period of three years following project completion. Inspection reports shall be submitted monthly to the CITY along with payment requests. The contractor shall maintain all

storm water pollution control devices on the project in proper working order, including cleaning and/or repair during the duration of the project.

2. No condition of either the AZPDES or the SWPPP shall release the contractor from any responsibilities or requirements under other environmental statutes and regulations.
 3. Upon total project completion, acceptance, and de-mobilization, the contractor shall submit its completed, signed NOT form to the ADEQ with copies to the same agencies who received copies of the NOI, thereby terminating all AZPDES permit coverage for the project.
- D. Payment: There shall be no separate payment made to the Contractor for all material, labor, and other incidental costs relating to the provision, installation, and maintenance of items relating to this permit during project construction. Such incidental costs shall include contractor costs in order to assure proper operation of the pollution-control devices installed including all maintenance, cleaning, and disposal costs associated with clean-up and repair following storm events or other runoff or releases on the project.

17. EXISTING UTILITIES, RIGHTS-OF-WAY, EASEMENTS

A. EXISTING UTILITIES

Because of the nature of this contract, existing utilities are not shown or indicated in these specifications, except to note that their locations are within rights of way, streets and easements throughout the City of Sedona area. The fact that utilities are not shown shall not relieve the Contractor of the following responsibilities:

1. The Contractor shall be responsible for the preservation of all existing water, sewer, storm sewer, buried transmission lines or any cable or utility. If damaged, all costs for the necessary repairs shall be paid by the Contractor.
2. The Contractor shall locate and verify the location of all existing utilities prior to any excavation. This shall be done at least two (2) days prior to excavation for installation of project facilities or ordering equipment or materials for those facilities.
3. The Contractor shall be responsible for the location of all service lines.
4. Continuation of Service - All services shall be maintained to all areas at all times during the construction period, except when it is necessary to shut down a line to make a connection with the new line. Residents shall be given twenty-four (24) hour notice when it is known that the service will be interrupted. The Sedona-Oak Creek Fire District shall be kept advised of the status of all fire hydrants affected by any work on this Project.
5. The Contractor is responsible for as-building all existing utilities within the improvement area (location, depth, and material).

B. RIGHTS-OF-WAY AND EASEMENTS

The City will furnish land, right-of-way, or easements as shown in the Contract Documents for the performance of the Work under the Contract. Contractor shall confine his operations to the land, right-of-way or easements furnished, and will restore the same to their original conditions to the extent reasonably possible prior to final acceptance of the work. Prior to construction or entry thereon, the Contractor shall obtain copies of and become familiar with any agreements and stipulations used by the City in acquiring temporary or permanent easements.

The Contractor shall remain within easement areas and rights-of-way obtained or owned by the City or easement areas the Contractor has obtained. Disturbed areas shall be reasonably restored upon completion of installation of the project improvements and related appurtenances in the easement. The Contractor shall be responsible to adhere to easement provisions whether the easement was obtained by Contractor or City. A temporary 4-foot high orange fence shall be placed to define the work area for all easements encompassing all work that occurs outside the City right-of-way. Clearing by manual means for the purpose of defining the area to be fenced shall be the only activity allowed on the easement before the fence is placed. City shall provide the Contractor with a copy of the easement agreement with the property owner, upon request. Contractor shall be responsible for all restoration of the easement as described in the easement agreement. Trees and larger vegetation shall be preserved to the maximum extent practicable.

The Contractor shall be responsible for the preservation of all existing property pins. If disturbed or damaged the Contractor shall be responsible for all costs associated with the restoration of any property pin disturbed by the Construction activities. Any property monuments, which require resetting, shall be reset under the direction of a licensed Surveyor by the State of Arizona and proper documentation recorded with the appropriate County.

Access by Residents: The Contractor shall ensure that all residents have access from the Street to their property each night. When access to a resident's property cannot be maintained during normal working hours (week days), the Contractor must personally notify the affected residents two working days in advance of the closure. Such notification shall be documented in writing to the Engineer. Emergency access shall not be blocked, for any reason without the express written permission from the owner.

Access to Public Facilities: The Contractor shall assure that safe access to facilities including, but not limited to, parking lots, picnic shelters, playgrounds, and pedestrian ways is provided. Any disruption to the public's normal use of said facilities shall not occur without the express written permission from the City.

Intersection and Driveway Maintenance: Once work has commenced in a particular street, the Contractor shall provide and maintain access facilities to all connecting streets, intersections and private driveways by ramping or surfacing with suitable materials to ensure access at all times. If in the opinion of the City, such facilities, or materials used, are not capable of supporting traffic, the Contractor shall remove the materials and provide better-suited materials, including asphalt concrete or similar, as directed by the Engineer. This work shall be considered incidental to the Project, and all costs shall be borne by the Contractor. Failure to comply with these requirements may result in stoppage of the work until corrected as determined by the Engineer, with no time extension being granted for such delay to the Project.

18. OPERATIONS, LAYDOWN YARD AND STORAGE AREAS

- A. All operations of the Contractor (including laydown yard, storage of materials, supplies, and equipment) shall be confined to areas authorized by the City. **The City of Sedona does not have available construction staging or material lay down facilities, except as specified otherwise in the specifications.** The Contractor is responsible for arranging and providing for such facilities as is deemed necessary for carrying out the work of this contract. The City does not warrant or represent in any way the availability of staging or material lay down areas within the City or vicinity of the project. It is the Bidder's responsibility to make such determinations. The price paid for mobilization shall include all costs for and associated with providing construction staging and material lay down facilities necessary for constructing the project. If a mobilization item is not included in the specification, the cost for compliance with item shall be considered as included in the unit price (s) bid for the various items of work. The Contractor shall be liable for all and any damages caused by him to such premises.

The Contractor shall comply with the following, regarding laydown yards:

- Any use of vacant property adjacent to or near the project used for parking or servicing equipment and/or storing of material will require the Contractor to provide written approval from the property owner, homeowner associations as applicable, and the filling of a temporary use permit from the City of Sedona.
- A copy of the property owner's approval shall be submitted to the Engineer, stating the use of the laydown yard for use during the construction of this project is acceptable.
- The Contractors yard shall be enclosed with a six (6) foot temporary fence.
- Storage of Gasoline will require Fire Department approval.
- Clearing or grading of the site in excess of fifty (50) CY of soil will require a grading permit. No grading will be allowed which changes the drainage path for the parcel without the approval of the City Engineering Department. All existing pipes and drainage facilities at the laydown yard will be maintained in working order at all times.
- A stabilized construction entrance will be required if the vacant property laydown yard is not already gravel or pavement. The laydown yard shall be adequately maintained to control dust and mud from leaving the property.
- Work in the laydown yard shall be scheduled so as to comply with any City noise or light Ordinances and these specifications.
- Equipment, materials, etc., shall be located so as to minimize impact to adjacent properties.
- Before any grading of any laydown yard, property corners will be located for the parcel. Any property pins disturbed by the Contractors operations will be replaced prior to final acceptance of the project.
- The Contractor shall obtain a written release from the property owner, homeowner's associations or similarly concerned parties after completion of use. A copy of the release shall be presented to the Engineer.
- Equipment and material shall not be stored in the right-of-way and/or street easement during non-work hours without permission of the Engineer. Such permission shall be subject to finding that it is impractical to move the equipment or material because of size or that permission has been granted to close the right-of-way to all traffic, including local traffic. Lack of construction yard or other staging

area shall not be considered as reason to grant permission. Such permission, if granted, shall be subject to conditions determined at the sole discretion of the Engineer.

- B. The Contractor shall hold and save the City free and harmless from liability of any nature or kind arising from any use, trespass, or damage occasioned by his operations on the premises of third persons.
- C. The Contractor shall be wholly responsible for the care, compliance with law, and storage of materials, supplies or equipment delivered on the work site or purchased for use thereon. Stored materials, supplies, or equipment shall be carefully and continuously protected from damage or deterioration and so located so as to facilitate inspection by the City. The responsibility for the care and storage of materials, supplies, or equipment shall be with the Contractor whether such materials, supplies, or equipment are furnished by the Contractor or by the City. Storage of materials, supplies, or equipment shall not unduly interfere with the progress of the Contractor's Work or the work of any other contractor.
- D. Traffic Control:

Adequate traffic flow shall be maintained at all times, all barricading and temporary signage for detours and traffic control must meet the standards set by the Manual of Uniform Traffic Control Devices (MUTCD) and the City Engineer. If traffic control is not a separate bid item; then, it is considered incidental to the work and shall be included as appropriate in the Contractors bid. The Contractor must also take responsibility for public safety, meaning:

 - 1. That, except for alleyways, one lane of the roadway for each direction must be kept open at all times; OR
 - 2. Certified flaggers must be provided to properly channel traffic at all times when two separate lanes (one each direction) cannot be maintained open; OR
 - 3. Total closure of a roadway shall only occur with the written permission of the City Engineer. For all rights-of-ways requiring closure for any work therein, appropriate permits shall be obtained. Prior to start of construction, the Contractor shall provide the Engineer with planned traffic control methods and procedures for this project. A notice of closure for residents, along with a map showing the planned area of distribution shall be included as part of the planned methods and procedure. Proper traffic control and advance warning signage shall be in place prior to any road closure.
 - 4. When detours or road closures are implemented an overall map showing anticipated flow of traffic shall be provided.
 - 5. The Contractor shall have a designated person responsible for overall traffic control on-site at all times.
 - 6. A Traffic Control Plan shall be submitted for review. The plan is intended to be a guide; Contractor shall submit any proposed revisions for approval by the Engineer.
 - 7. Pedestrian traffic must be maintained at all times, on at least one side of the road.
 - 8. The Contractor shall supply a Public Announcement showing closures and detours.

E. Water Use

1. All water used by Contractor for testing, compaction, dust control, or other uses related to construction, shall be obtained by the Contractor from an approved water source. The Contractor shall be responsible for all deposits, charges and fees.

Reclaimed water is available to the Contractor for dust control and other on-site construction uses at no cost to the Contractor (other than testing costs noted below), according to the following limitations (any required water outside these limitations shall be provided by the Contractor from an approved source):

- a. Reclaimed water will be available for use by the Contractor Monday – Friday. It shall be the Contractor's responsibility to apply for and obtain a Type 2 General Water Reuse Permit (Class A+ Reclaimed Water) from ADEQ for dust control and other construction uses. Contractor shall also be responsible for the cost of fecal coliform testing. The cost of testing is \$50 for each day that water is taken for construction use.
- b. Water shall be provided from the effluent pump station wetwell at the Wastewater Treatment Plant using contractor-provided submersible pump.
- c. Contractor is responsible to supply conveyance and storage facilities for water made available by the City. Contractor shall record and report to the City on a weekly basis the date and amount of water used.

F. Dust and Debris Control

- 1. The contractor shall cover all trucked loads of soil, rock and material that may drop from, be sifted from or blown from the vehicle. The City may require that trucks arriving with uncovered loads not be allowed to deliver material to the project, regardless of whether or not the truck is the contractor's, a subcontractor's, a service provider's, or a material supplier's vehicle. If trucks leave the site with uncovered loads the City reserves the right to do one or more of the following:**
 - a. The truck will not be allowed on the site
 - b. The contract compensation will be reduced by \$150 per observed uncovered load. The contract time will be reduced by one day**
 - c. The Police Department may issue a citation.
2. Pine slash and/or cut down pine trees shall be removed from the City within 24 hours, including any non-working days, of being broken or cut. This measure is to minimize pine bark beetle infestation in Sedona.
3. The contractor shall take measures to prevent blowing debris and/or dust from the site.
4. Dust Control shall comply with the following:
 - a. Dust control shall be maintained at all times on the project. Spray nozzles shall be used as necessary on equipment to reduce dust. Mist shall be visible when standing adjacent to the equipment.
 - b. A Dust Control Plan shall be submitted prior to Start of Construction.
 - c. Cleanup and Dust Control shall be in compliance with MAG Section 104.1.3 and 104.1.4.

5. The contractor shall clean any dirt tracked from the project work area from streets and sidewalks using equipment and methods that will not create excessive dust. Sweeping is the preferred cleaning method. Washing of streets and/or sidewalk and other paved areas will require special permission from the Engineer and shall be subject to conditions imposed by the Engineer. The City reserves the right to require that the Contractor to cease work that is resulting in excessive tracked mud and/or dirt from and within the project area, and to require cleaning prior to allowing the ceased work to continue. The exercise of the City's right and impacts there from shall not provide a basis for claim by the contractor. Failure of the Contractor to cease work shall be sufficient reason for the City to reduce the contract time by one calendar day per incident, at the City's sole discretion.
6. Dirt, debris, wastewater and other debris shall not be disposed of in stormwater facilities and/or natural drainage channels. The City may require inspection of stormwater facilities and/or natural drainage channels prior to and during the work to verify compliance with this requirement. The City may require the contractor to clean stormwater facilities and/or natural drainage channels if the contractor has disposed of material to them. Final Completion will not be issued until all stormwater facilities have been inspected and approved.

G. Open Trenches

MAG Specification Section 601.2.10 is modified to limit the length of open trench to 1100 feet within the project. An open trench includes any longitudinal excavated area 3 inches or more below adjacent land which has settled or been left lower intentionally. All open trenches shall properly marked and protected so as to warn pedestrians and vehicular traffic of a low area.

19. RIGHT-OF-ENTRY

Contractor shall provide to the City, Architect-Engineer, or representative of the Federal, State, County, District and Municipal governmental officials and services, the proper facilities for access to the Work, whenever it is in preparation or progress.

20. ACCESS AND DRAINAGE

The Contractor shall keep a sufficient clear area around fire hydrants to permit their full and effective use in case of fire. The Contractor shall keep natural drainage and watercourses unobstructed by spoil piles, material storage, or any other operations, or provide for other equal courses effectively placed.

21. SANITARY CONVENIENCES

The Contractor shall furnish the necessary sanitary conveniences, properly secluded, for the use of work persons during construction, and these conveniences shall be maintained in a manner that will be inoffensive and in compliance with Federal, State and local health and sanitation requirements.

22. CLEANUP PRACTICES

- A. The Contractor shall at all times during the progress of the work maintain a reasonably clean job site, this includes, but is not limited to, keeping signs clean and legible, minimizing mud, rock, and dirt on roadways, and keeping ditches free of trash and construction materials. If in the opinion of the Engineer, excessive dust, mud or debris exists at the job site, the Contractor shall immediately remove said material as directed. All costs associated with this work shall be borne by the Contractor. The location of debris and material stockpiles shall be as directed by the Engineer.
- B. The Contractor shall begin his daily clean-up process at a typical time agreed to by the City at the pre-construction meeting. If the Contractor's operations and daily shut-down exceed a forty hour work week or eight hour day then the City will be entitled to withhold a portion of the Contractor's progress payment for City "overtime" work pursuant to Section 32 and 39, unless authorized by the Engineer.
- C. The site shall be kept clean of trash and debris including but not limited to, loose construction materials, such as sand, cement, lime, wood pieces, building paper, and other miscellaneous paper. All trash and debris shall be placed in an appropriate number of approved containers and moved and disposed of off the site daily in a location where it will not be possible to be dispersed. No burning of trash or debris will be permitted on the site, except where designated by the Engineer. The laydown yard shall have a minimum of one container of appropriate size at all times.

When site daily clean-up has not been kept up as requested in writing by the City the Contractor shall bring the site into compliance with the City within 24 hours or the City shall withhold \$350 for each day out of compliance.

- D. Before final payment, the Contractor shall remove all rubbish, excess materials, temporary structures, and equipment. All parts of the work shall be left in a neat and presentable condition. Excess mounds of earth shall be leveled and ruts and depressions filled, such that the completed work is attractive. If in the opinion of the Engineer, the Contractor does not maintain the Construction Site in a safe and clean condition, or does not adequately clean up the site at the completion of the work, or rectify any valid complaints of damage to property resulting from the Construction, the City may clean up or rectify damage and charge the costs thereof to the Contractor.
- E. The Contractor shall be responsible for locating sites and making arrangements for disposal of all material removed from the site. This includes concrete, asphalt, unsuitable or unstable trench material and any other trash, rubbish or debris generated as a result of construction. Asbestos, hazardous substances or materials, hazardous waste or any other regulated substances or materials shall be disposed of in accordance with all applicable federal, state and local regulations.
- F. All vegetation and improvements removed from easements by the Contractor shall be removed or repaired by the Contractor in accordance with the easement agreement with the property owner, the same being done at no additional cost to the City.

23. PLANS AND SPECIFICATIONS

- A. The City will provide the Contractor with four (4) sets of plans, drawings, and specifications after the execution of the Contract. If additional plans, drawings, and specifications are required, the Contractor shall compensate the City for it.
- B. When, in the opinion of the City, revised partial plans, drawings and specifications are required to clarify or reflect authorized changes or additional work the City shall provide four (4) copies of such revisions to Contractor. The Contractor must pay for any additional copies. Contractor shall immediately post such revisions to his record set of Contract Documents.
- C. The plans, drawings, and specifications are the property of the City, and are furnished to the Contractor for the construction of Work under the Contract only.
- D. The data given in the specifications and shown on the plans and drawings is believed to be accurate but the accuracy is not guaranteed. The Contractor must confirm all levels, locations, measurements, and verify all dimensions on the job site prior to construction and adapt his Work into the exact limits of construction. Scale measurements taken from plans are only for reference.
- E. Drawings showing the details of the Work specified are designated "plans" or "drawings" and together with the specifications form an integral part of the Contract Documents.

24. CORRELATION OF DOCUMENTS

- A. Plans, drawings, and specifications are cooperative and supplementary. Portions of the Work, which can best be illustrated by the plans or drawings, may not be included in the specifications and portions best described by the specifications may not be depicted on the plans or drawings. All items necessary or incidental to completely construct or erect the Work specified shall be furnished, whether called for in the specifications or shown on the plans or drawings. Unless otherwise stated the plans and specifications shall be considered to require construction or erect of a complete and operable facility.
- B. Special Conditions shall take priority over Technical Specifications, which shall take priority over General Conditions; large-scale drawings shall take precedence over small-scale drawings. In case of a disagreement between the plans, drawings, and specifications, or within a document itself, the better quality and the greater quantity of work shall be estimated and included in the bid and contract sums and the matter drawn to the City's attention for further decision, and possible issuance of an addendum.

25. SHOP DRAWINGS, SAMPLES, AND OPERATOR'S INSTRUCTION

- A. The Contractor shall furnish all Shop Drawings and Samples required by the Contract Documents. Shop Drawings of equipment and devices offered by the Contractor for approval of the City shall be in sufficient detail to adequately show construction and operation. The above material shall be submitted to the City for review in electronic format (.pdf and/or .dwg). Shop drawings submitted as herein provided by the Contractor and approved by the City for conformance with the design concept shall be executed in conformity with the Contract Documents unless otherwise required by the City.

- B. Work performed in connection with the fabrication, manufacture, shipment, or purchase of material or equipment prior to approval as specified shall be at the Contractor's sole risk and responsibility.
- C. Shop Drawings and Samples shall be accompanied by a letter of transmittal indicating that the Contractor has reviewed and approved the submittal. The transmittal shall give a list of the numbers and dates of the submittal, and shall be in the form required by the City. Any re-submittals shall show numbers and dates of previous submittals. Shop Drawings shall be complete in every respect and bound in sets.
- D. The Contractor shall submit all Shop Drawings and Samples (submittals) sufficiently in advance of construction requirements to allow ample time for checking, correcting, resubmitting, and rechecking to avoid any delay in progress of the Work. In no case however shall this time be less than five (5) working days without the consent of the Engineer. In the case of submittals for pump installations and similarly complex equipment the minimum time frame shall be twenty (20) working days. This time frame shall also apply to resubmittals. If more than five (5) submittals are made in a week the minimum City review time shall be extended by five (5) days for each submittal. The Contractor shall be solely responsible for delays and costs related to resubmittals or untimely submittals.
- E. Shop Drawings or Samples submitted shall be marked with the name of the Project, numbered, and bear the stamp of approval of the Contractor as evidence that the Shop Drawings and Samples have been checked by the Contractor. Any shop drawings or samples submitted without this stamp of approval shall not be considered and shall be returned to the Contractor for resubmission. If the Shop Drawings or Samples show variation from the requirements of the Contract, the Contractor shall call such variation to the City's attention in his letter of transmittal in order that, if acceptable and City gives written approval to the variation, suitable action may be taken for proper adjustment.
- F. By approving and submitting shop drawings and samples, the Contractor thereby represents that he has determined and verified all field dimensions and measurements, field construction criteria, materials, catalog numbers, and similar data, and that he has checked, and coordinated such submittals with the requirements of the Work and the Contract Documents.
- G. If a Shop Drawing or Sample, as submitted, indicates a departure from the Contract requirements which the City finds to be in the interest of the City and to be so minor as not to involve a change in the contract price or time for performance, it may approve the Drawings or Samples; provided, however, such departure is slight in nature and does not affect the design concept of the Work.
- H. All items of standard equipment shall be the latest model at time of delivery.
- I. When Shop Drawings are submitted for the purpose of showing the installation in greater detail, their approval shall not excuse the Contractor from requirements shown on the plans and specifications.
- J. Shop Drawing and Sample submittals not conforming completely with the above requirements shall be returned to the Contractor, without action, for re-submittal and the resulting delay shall be entirely the responsibility of the Contractor.

- K. The City's check and approval of Shop Drawings and Samples, specifications, and descriptive literature submitted by the Contractor shall be only for general conformance with design concept, as otherwise provided, and shall not be construed as:
1. Permitting any departure from the Contract requirements;
 2. Relieving the Contractor of the responsibility for any error in details, dimensions, or otherwise that may exist in such submittals;
 3. Constituting a blanket approval of dimensions, quantities, or details of the material or equipment shown; or
 4. Approving departures from additional details or instruction previously furnished by the City. Such check or approval shall not relieve the Contractor of the full responsibility of meeting all of the requirements of the Contract Documents.
- L. One (1) electronic copy and four (4) sets of bound operator's instructions and maintenance manuals shall be furnished by the Contractor for equipment furnished under the Contract that is specially listed or that is considered to be of a special or complex nature. Operator's instruction and maintenance manuals shall include, in part, detailed lubrication drawings showing type and frequency of lubrication. Detailed parts drawings shall show location, name and catalog numbers of parts.
- M. One (1) electronic copy and four (4) sets each of bound service parts manuals shall be furnished by the Contractor for all items of standard manufacture.
- N. All operator instructions, maintenance, and parts manuals shall be bound in permanent binders satisfactory to the City and shall be furnished to the City before final acceptance of the installation by the City.
- O. Four (4) copies of any manufacturer's guaranty/warranty or certificate for any type of material or equipment provided shall be submitted to the City prior to final acceptance of the Work by the City.

26. DRAWINGS SHOWING CHANGES DURING CONSTRUCTION

Throughout the progress of construction, the Contractor shall maintain a careful up-to-date record of all changes on the plans and drawings during actual construction. *With each progress payment invoice the Contractor shall provide a "Status As-Built" showing all work completed to date.* Callouts will identify type, size and quantity of each item installed. The Contractor shall annotate all sewer taps stationing upstream to downstream using swing ties from adjacent manholes or other method the Engineer may approve in writing. Upon completion of Work, and prior to acceptance by the City, the Contractor shall file with the City one set of complete contract drawings with all changes and Contractor's field construction notes neatly and legibly recorded thereon. Such drawings shall include but not be limited to, the exact routing and clearances, if changed from drawing location, of sewer, water, gas, oxygen supply, condenser water lines, fuel oil tanks and lines, fire protection lines, and any other major buried utility lines and routing of buried electrical feeder lines and changes to routing of conduit runs which are buried or concealed in concrete slabs. The Contractor shall furnish such As-Built utility and drainage invert and rim elevations as well as gutter, top of curb shots and horizontal location of valves and hydrants placed as a part of this construction. This information is for use by the City in the preparation of record "As-Built" Drawings. Curb and gutter shots shall be spaced no

further than 50 feet apart and shall include any significant bends, drops or other deviations from a straight horizontal or vertical alignment.

27. MATERIALS, EQUIPMENT, SUPPLIES, SERVICES, AND FACILITIES

- A. It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, equipment rental, water, heat, light, fuel, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete, and deliver the Work in a workman like manner within specified time.
- B. No materials, equipment, or supplies for the Work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.
- C. Equipment shall be properly equipped with safety devices including but not limited to spark arrestors, back up alarms, reflectors, signage, labeling, and lights.
- D. At least one (1) set of all appropriate Material Safety Data Sheets shall be maintained in a common location on the project site at an identified location during all working hours.

28. WORKMANSHIP, MATERIALS, AND EQUIPMENT

- A. All material and equipment furnished by the Contractor shall be new and unused and shall strictly conform to the Contract Documents. Competent labor, mechanics and tradesmen shall be used on the Work. Experienced manufacturer's representatives shall be used to supervise the installation of equipment as may be required by the City. Any special tools or equipment, which may be required, shall be provided by the Contractor.
- B. The acceptance at any time of materials or equipment by or on behalf of the City shall not be a bar to future rejection if they are subsequently found to be defective, inferior in quality or uniformity to the material or equipment specified, or are not as represented to the City.

29. QUALITY OF MATERIALS IN ABSENCE OF DETAILED SPECIFICATIONS

- A. Where the Contract requires that materials or equipment be provided or that construction work be performed, and detailed specifications of such materials, equipment or construction work are not set forth, the Contractor shall perform the work using materials and equipment as described in the specifications. Constructed or installed as described therein, and shall follow standard practices in the performance of construction work. The work performed shall be in conformity and harmony with the intent to secure a good, serviceable standard of construction.
- B. All tests and re-tests unless otherwise provided, shall be in accordance with the pertinent sections of the latest edition of the standards applicable to the material or devices to be tested. A partial list of the principal societies referred to and their Abbreviations follows:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISC	American Institute of Steel Construction

ANSI	American National Standards Institute
ASTM	American Society of Testing Materials
AWWA	American Water Work Association
CPI	Clay Pipe Institute
CS	Commercial Standards
FS	Federal Specifications
NEC	National Electric Code
TMCA	Tile and Marble Contractors of America

30. VARIATIONS FROM ESTIMATED QUANTITIES

When unit prices are utilized in the Contract Documents, it may be reasonably expected that there could be variations in final quantities from the estimated quantities by reason of actual conditions and/or change orders. An adjustment in compensation may be allowed only to the following extent:

- A. For a decrease greater than twenty percent (20%) in either the total cost of the contract or the total cost of a major item and when a reasonable cost analysis supports an increase in the pro rata share of fixed cost chargeable to this item in total, an adjustment in the monies due the Contractor may be made. The total amount, including any adjustment, will not exceed eighty percent (80%) of the original lump sum contract amount or, for a unit price item, the total amount, including adjustment, will not exceed eighty percent (80%) of the original extended unit bid price.
- B. For an increase greater than twenty percent (20%) in either the total cost of the contract or the total cost of a major item, any adjustment made will only apply to that cost in excess of one hundred twenty percent (120%) of the original bidding schedule. If either party presents a reasonable cost analysis that shows a change in the pro rata share of fixed costs chargeable to this item in total, an increase or decrease adjustment may be made. This increase or decrease adjustment will be made on such basis as is necessary to cover a reasonable estimate of cost, plus an allowance, not to exceed ten percent (10%), for overhead and profit.
- C. A major item is an item whose total cost, determined by multiplying the bidding schedule quantity and the contract unit price, is equal to or greater than the amount indicated below. A major item will remain a major item unless it is completely eliminated. Compensation for a completely eliminated major item shall be limited to the amounts indicated, but not to exceed the amount demonstrated by information provided to show the cost impact of the deletion, not including anticipated profit.

Total Contract amount as awarded equal to or greater than (in dollars)	But is less than (in dollars)	A major bid item Shall be equal to or greater than the following amount (in dollars)	If the item is completely eliminated compensation shall be limited to no more than (in dollars)
\$0.00	\$1,000,000	\$50,000 or 10% of the Contract amount as awarded	\$2,000

\$1,000,000	\$5,000,000	5% of the Contract amount as awarded	\$5,000
\$5,000,000	\$20,000,000	2.5% of the Contract amount as awarded	\$7,500

D. For either an increase or decrease in cost, no claim shall be made by the Contractor for any loss of anticipated profits.

31. PROGRESS PAYMENTS

- A. When monthly progress payments are authorized, the Contractor shall, on the date determined during the pre-construction meeting, submit to the City an itemized application for payment, supported by “Status As-Builts” and such data substantiating the Contractor's right to payment as the City may require, on forms acceptable to the City. Progress payments shall be made no more than once each calendar month and provided that there are a minimum fifteen (15) calendar days between payments, unless otherwise authorized on a payment-by-payment basis by the City Engineer or City Manager. Progress payments are subject to retainage of ten percent (10%) with possible reduction to five percent (5%) in accordance with the provisions of Arizona Revised Statutes.
- B. The Contractor shall provide to the City at the time of payment, a waiver and release to date from the Contractor and each and every Subcontractor and material supplier whose work or materials are included in the application for payment, evidencing that said Contractor, Subcontractor or material supplier has been paid in full to date.
- C. Unless otherwise provided in the Special Provisions, payment will not be made on account of materials or equipment not incorporated in the work, at the time of a request for payment, but delivered and stored at the site. Similarly, payment will not be made for materials or equipment stored at some other location unless agreed upon in writing. If payment is allowed per the Special Conditions, payment for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the City to establish the City's title to such Materials or equipment or otherwise to protect the City's interest, including applicable insurance and transportation to the site for those materials and equipment stored off-site.
- D. The Contractor warrants that title to all materials, supplies, and equipment covered by an application for payment, whether incorporated into the Work or not, shall pass to the City, upon receipt of payment by the Contractor, free and clear of all liens, claims, security interests or encumbrances; and that such materials, supplies or equipment furnished or installed comply with the applicable requirements of the Contract Documents.
- E. The passing of title to the City as herein provided shall not be construed as relieving the Contractor of the sole and complete responsibility for:
1. The care and protection of the materials, supplies, equipment, and Work for which payment has been made.

2. The restoration of any damaged or destroyed Work, materials, supplies or equipment. Such responsibility shall continue until all Work under the Contract has been completed and accepted by the City.
- F. Under no circumstances shall payment constitute a waiver of the City's right to require the Contractor to fulfill all of the terms and conditions of this Contract.
- G. **INVOICE PROCESSING:** The City will not accept inaccurate, illegible, or incomplete invoices (requests for payments). Invoices shall be hard copy, with original signature. Electronic or facsimile signatures are not acceptable on the invoice.
1. The City distributes payments on every other Friday, beginning on 01/09/15 for calendar year 2015, unless holidays dictate otherwise.
 2. The Engineer must receive an acceptable, correct invoice with required supporting documentation not later than close of business on the Wednesday, nine (9) calendar days prior to the expected check distribution day.
 3. For projects longer than sixty (60) calendar days duration, each request for payment shall be accompanied by a progress schedule, effective through the invoice period. The City shall not release a payment until the contractor provides an acceptable, accurate, and updated project schedule.

32. PAYMENT WITHHELD

- A. The City may decline to certify payment on account of subsequently discovered evidence or observations, may nullify the whole or any part of any payment certificate previously issued to such extent as may be necessary to protect the City from loss on account of any one or more of the following:
1. Defective Work not remedied.
 2. A reasonable doubt that the Contract can be completed for the balance then unpaid.
 3. Unsatisfactory prosecution of the Work.
 4. Not maintaining a current project schedule.
 5. Not providing adequate progress payment "Status As-Builts".
 6. Deductions for not conforming to daily clean-up requirements.
 7. Deductions for reimbursement of City overtime inspection.
 8. Liquidated damages payable by the Contractor.
 9. Disputed Work or Materials.
 10. Failure to comply with other material provisions of the Contract.
 11. Third-party claims filed or reasonable evidence that a claim will be filed.
 12. Failure of the Contractor or Subcontractor to make timely payments for labor, equipment, and materials.
 13. Damage to the Owner.

In addition, the City reserves its rights under ARS Sections 32-1129.01 and 34-221I.

- B. When any of the above problems are resolved, payment shall be made for amounts withheld pursuant to Article 31.

33. MEASUREMENTS

- A. The itemized Application for Payment will be used by the Engineer as a basis for evaluating requests for payment, except in cases where unit prices have established the basis for payment shall include as a minimum the following items:
1. Separate cost itemizations for mechanical, piping, structural, electrical instrumentation, painting, pre-engineered structures, and architectural finish work.
 2. Separate cost line items, showing both purchase and installed cost, for the major equipment items listed in the bidding schedule.
 3. A separate line item for mobilization not to exceed ten percent (10%) of the total Contract amount. This limitation shall apply even when a bid item for mobilization is shown in the bid schedule, unless the Engineer has assigned a fixed cost for the item. Amounts excess of this limitation shall be included on the final payment.
 4. A separate line item for demobilization, not to exceed one-half of one percent (0.5%) of the total Contract amount. This limitation shall apply even when a bid item for demobilization is shown in the bid schedule, unless the Engineer has assigned a fixed cost for the item. Amount in excess of this limitation shall be included on the final payment.
 5. Separate line items for earthwork, demolition and clearing and grubbing, where appropriate. Measurement and payment for the various items shown by the Contract Drawings and described in the construction Specifications, and comprising the completed work, shall be subject to this Article.
- B. The contractor may subdivide any of the lump sum bid items in the proposal as necessary to identify items per (A) above, however the neither the total bid or the total of any subdivided bid item line shall exceed the total in the bid proposal as awarded.
- C. Payment for each item shall constitute payment in full for the furnishing of all materials, equipment, appurtenances, labor, plant and tools necessary to provide a complete workmanlike, finished, and satisfactory project, as shown by the Contract Drawings and described in the Specifications. Each item shall be completed with all necessary connections, testing, painting and related work accomplished to provide for the satisfactory use and/or operation of the item. No additional payment will be made for work related to each item, unless specifically noted or specified.
- D. No additional payments will be made for work related to any item unless specifically noted and called for in the Bid Proposal. Payment will be made at the unit price or lump sum price bid in the Bid Proposal.
- E. Measurement will be on the completed work in place, with no allowance for waste, and as may be more particularly described in the description of the various items set forth in the Specifications and as shown by the Contract Drawings.
- F. The quantities set forth in the Bid Proposal are used for the purpose of determining the basis of the Award of the Contract, and may be varied by the Engineer to conform to the requirements of the work as set forth in the Contract Drawings, and the Contractor agrees to perform the work on the basis of the prices bid for the items contained in the Bid Proposal regardless of whether or not the items or units are decreased or increased.**

- G. The Engineer shall have the right to order omitted from the Contract any item or a portion of the estimated quantity for any item found unnecessary to the work without violating the Contract or Performance Bond.
- H. Except in cases where unit prices form the basis for payment under the Contract, the Contractor shall, within twenty (20) days of receipt of the notice to proceed, submit a breakdown of the Contract price showing the value assigned to each part of the work including an allowance for profit and overhead. In submitting the breakdown, the Contractor certifies that it is not unbalanced and that the value assigned to each part of the work represents his estimate of the actual cost, including profit and overhead, of performing that part of the work. The breakdown shall be sufficiently detailed to permit its use by the Engineer as one of the bases for evaluating requests for payment.
- H. Mobilization and Demobilization: Payment for Mobilization shall include the cost for setting up Project offices and moving Equipment to the site, storage facilities, obtaining permits, and all other items required to prepare the Project site for commencement of construction activities. Demobilization shall include removal of Contractor's facilities and Equipment, and final cleanup, and all other items required to complete Demobilization.

Payment for mobilization shall be in accordance with Section 901 of ADOT Standard Specifications for Road and Bridge Construction (most current edition), except as modified by this section and General Conditions Section 18, 33, and 66. Retention shall apply to mobilization payments. The first payment for mobilization shall be contingent on providing:

1. A traffic control plan that has been approved by the Engineer
 2. The Storm Water Pollution Control Plan provisions are in place per the SWPPP in the Civil Plans
 3. The Contractor shall have a City of Sedona or ADEQ NOI for stormwater pollution prevention
 4. The Project Sign has been posted
 5. A complete project schedule as required by the General Conditions, Section 9.
- I. Excavation-Generally: The excavation rates shall include the amount for working in such a manner as not to interfere with the stability of adjacent structures and properties, for the costs of all timbering or other support required, for all necessary measures to keep the excavation free from water and sewage whether affected by floods, storms or otherwise, for working space, refilling, consolidating and disposal of surplus material from temporary spoil heaps or disposal as directed by the Engineer. The rate shall apply to the excavation in any material, including rock.

No extra payment will be made if the position of the work as set out will not allow the use of a mechanical plant or necessitates the cartage to temporary spoil heaps of excavated material and the reloading and cartage back for refilling of excavations or disposal.

34. PAYMENT, USE OR OCCUPANCY OF WORK

- A. No progress or final payment, nor any partial or entire use or occupancy of the Work or improvement, nor acceptance thereof, by the City shall be evidence of the performance of the Contract or construed to be acceptance of defective work or improper materials, either

wholly or in part. The Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute.

- B. The City shall have the right to take possession of, use, or occupy any completed or partially completed portions of the Work, notwithstanding the time for completing the entire Work or any portions, may, or may not, have expired. Such taking possession, use or occupancy shall not be deemed an acceptance of any Work until all Work has been completed in accordance with the Contract Documents. If such prior use or occupancy increase the cost, or delays the Work, the Contractor shall be granted such extra compensation or extension of time, or both, as City may determine.
- C. Consent of Surety and endorsement from the insurance carrier or carriers permitting prior occupancy or use of any completed or partially completed portions of the Work by the City shall be secured by the Contractor. Contractor and his Surety and enforcement from the insurance carrier or carriers permitting prior occupancy or use of any completed or partial completed portions of the Work by the City shall be secured by the Contractor. Contractor and his Surety and insurance carrier hereby agree that such consent shall not be unduly withheld.

35. CLOSEOUT PROCEDURE

When the Contractor considers that the Work, or a portion thereof which the City has allowed to be accepted separately, is substantially complete, the Contractor shall prepare a letter stating the work, or a portion of the work, is substantially complete and submit to the City a comprehensive list of items to be completed or corrected. Substantial completion shall not operate to change the contract time to which liquidated damages are applicable. Reduced liquidated damages are chargeable for a project or portions thereof which have separately specified damages, if there are items of work remaining to be performed relative to such work once full substantial completion status has been attained. In such cases the amount of liquidated damages due shall be twenty-five percent (25%) of the unreduced liquidated damage amount stated in the contract, and shall not begin until after the contract completion date.

The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's list, the City will make an inspection to determine whether the Work or designated portion thereof is substantially complete. The City Engineer shall have the sole right to determine if a Work or portion thereof is substantially complete. If the City's inspection discloses any item, whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the City. The Contractor shall then submit a request for another inspection by the City to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the City will prepare a certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Contractor and City for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix a reasonable time within which the Contractor shall finish all items on the list accompanying the Certificate. If the Contractor does not complete the items within the time fixed by the City, the City, upon ten (10) working days notice, shall have the option to complete the uncompleted Work for the Contractor and deduct the cost from any amount due to the Contractor, whether or not the contract completion date has passed.

The Contractor may request a written statement from the City Engineer of what constitutes substantial completion by writing a letter of "Notice Of Intent to Declare Substantial Completion." The letter shall be sent no later than fifteen (15) working days prior to the anticipated date of Substantial Completion. The letter shall state what items the Contractor intends to complete prior to declaring substantial completion and what date substantial completion is anticipated by. The City Engineer shall respond to the letter within ten (10) working days accepting or adding to the list of items to complete prior to substantial completion. The City Engineer's response to the list shall not prevent the City Engineer from amending the list within a reasonable time prior to the anticipated date of substantial completion, or from considering factors not known at the time the response was prepared.

36. FINAL PAYMENT

- A. Prior to receiving final payment, the work shall be completed according to the Contract Documents, as determined by the City. Retention shall be as provided in A.R.S. §34-221. This includes, but is not limited to, submittal of complete as constructed documents.
- B. The acceptance of final payment by the Contractor shall operate as a release to the City of all claims by the Contractor for all things done or furnished in connection with the Contract and for every act and neglect of the City, and others relating to or arising out of the Work under the Contract, except for claims made in writing and still unsettled, and specifically itemized at the time the final payment request is made.
- C. No payment, final or otherwise, shall operate to release the Contractor or his Surety from any obligations under the Contract or under the Performance Bond or Labor and Materials Payment Bond, including, but not necessarily limited to anyone or more of the following:
 - 1. Obligations arising from or relating to latent defects.
 - 2. Faulty or defective work or material, which does not comply with the requirements of the Contract.
 - 3. Failure of the construction, equipment, or fixtures to perform properly in accordance with the requirements of the Contract Documents.
 - 4. Unsettled claims.
 - 5. Claims for non-payment of laborers, mechanics, material men, or suppliers, or for equipment used or rented.
 - 6. Claims under the maintenance requirements of the Contract Documents or any special warranties provided for in the Contract Documents.

37. SUPERVISION BY CONTRACTOR

- A. The Contractor or his designated representative will be required to give personal attention to the fulfillment of this Contract and to keep the work under control and in accordance with the Schedule for Completion. The contractor shall provide a competent Representative with full authority to receive and execute such instructions, orders or directions as the Engineer, or his agents or representatives may issue in connection with the Contract.

The Contractor will supervise and direct the work at all times. He has the obligation to determine the means, methods, techniques, sequences and procedures of construction, except in those instances where the City, to define the quality of an item of work, specifies in the

Contract a means, method, technique, sequence or procedure for construction of that item of work. The Contractor shall be responsible to perform the Work so that the quality of the Work conforms to the plans and the specifications while in progress and as finally completed.

- B. Instructions and information given by the City, Engineer, or his agents or representatives to the Contractor's representative on the work shall be considered as having been given to the Contractor. Before any work is done at the job site, the Contractor shall give written notice to the Engineer stating the name, home address and telephone number of the Contractor's representative. The Contractor shall also inform the Engineer in writing prior to any change of representative. A statement naming more than one person to be in charge depending upon which one is present at the time will not be acceptable.
- C. The Contractor shall file with the Engineer the names, addresses, and telephone numbers of representatives who can be contacted at any time in case of emergency. These representatives must be fully authorized and equipped to correct unsafe or excessively inconvenient conditions immediately on order of the Engineer.
- D. The Contractor shall pay and cause his Subcontractors to pay any and all accounts for labor, services, equipment, and materials used by the Contractor and his Subcontractors during the performance of work under this Contract, including all applicable taxes and insurance. Such accounts shall be paid as they become due and payable within the time limits set forth by law. The Contractor shall furnish proof of payment of such accounts to the City.
- E. **The plan or method of work suggested by the City or the Engineer to the Contractor but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor. The City and the Engineer assume no responsibility therefore and in no way will be held liable for any defects in the work which may result from or be caused by the use of such plan or method of work.**

38. WEATHER

- A. During periods when weather or other conditions are unfavorable for construction, the Contractor shall pursue only such portions of the work as shall not be damaged thereby. No portions of the work where acceptable quality or efficiency will be affected by unfavorable conditions shall be constructed while those conditions exist. It is expressly understood and agreed by and between the Contractor and the City that the Contract time for completion of the work described herein is a reasonable time taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work.
- B. The Contractor shall not be assessed liquidated damages, nor the cost of engineering and inspection during any delay in the completion of work caused by Acts of God, acts of the public enemy, acts of a public agency or owner, or a utility to provide for removal or relocation of existing utilities, unless such delay is caused in whole or in part by Contractor or any of its Subcontractors.
- C. A rain, windstorm, high water or other natural phenomena for the specific locality of the work, which might reasonably have been anticipated from historical records of the general

locality of the work, shall not be construed as abnormal. It is hereby agreed that rainfall greater than the following cannot be reasonably anticipated:

1. Daily rainfall equal to, or greater than, one inch during a month when the monthly rainfall exceeds the normal monthly average by fifteen percent or more.
2. Daily rainfall equal to, or greater than one and one-half (1-1/2) inch at any time.

Rainfall data shall be collected at the job site by the Contractor.

39. OVERTIME

Any Work necessary to be performed after regular working hours, on Sundays, or legal holidays, shall be performed without additional expense to the City unless otherwise provided in the Contract Documents.

The Contractor is responsible for completing his work activities within regular working hours. Should the Contractor elect to run his crews more than a typical 8-hour day, he may elect to with prior coordination with the City. Any inspection, which is required beyond the City of Sedona's Standard 8 hour work day due to extended work hours or late daily cleanup, is subject to a withholding by the City from the Contractors progress payment for the cost of the overtime inspection during that period. The amount withheld shall be itemized by person and reflect any overtime premiums paid.

40. INDEMNIFICATION

A. To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the City, its agents, officers, officials and employees from and against all tortuous claims, damages, losses and expenses (including but not limited to attorney fees, court costs, and the cost of appellate proceedings), relating to, arising out of, or alleged to have resulted from the acts, errors, mistakes, omissions, work, and/or services of the Contractor, its agents, employees or any tier of Contractor's subcontractors in the performance of this Contract. Contractor's duty to defend, hold harmless and indemnify the City, its agents, officers, officials and employees shall arise in connection with any tortuous claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death, or injury to, impairment, or destruction of property including loss of use resulting there from, caused by Contractor's acts, errors, mistakes, omissions, work or services in the performance of this Contract including any employee of the Contractor, any tier of Contractor's subcontractor or any other person for whose acts, errors, mistakes, omissions, work or services the Contractor may be legally liable. The Contractor shall, with respect to all work which is covered by or incidental to this Contract, indemnify and hold the City, Engineering Dept., all officers, employees, attorneys, agents of the City and the City Engineer, harmless from and against all of the following made by any person or entity not a party to this Agreement:

1. Any claim, liability, loss, damage, costs, expenses, including reasonable attorneys' fees, expert witness fees, court costs and other expenses of litigation, awards, fines, or judgments, arising by reason of the death or bodily injury to persons, injury to property, design defects (if design originated by Contractor only) or other loss, damage or expense, including any of the same resulting from any alleged or actual negligent or intentional acts or omissions of the Contractor, the Subcontractors, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless

of whether it is caused in part by a party indemnified by this Contract and regardless of whether said acts or omissions of such party are active or passive.

2. Any claim, liability, loss, damage, costs, expenses, including reasonable attorneys' fees, expert witness fees, court costs and other expenses of litigation, awards, fines, or judgments, arising out of any dispute regarding the Contract or any work performed under the Contract.
 3. Any claim, liability, loss, damage, costs, expenses, including reasonable attorneys' fees, expert witness fees, court costs and other expenses of litigation, awards, fines, or judgments, arising out of any dispute regarding the Contract or any work performed under the Contract by any Subcontractor.
 4. Any loss or damage that may happen to the work or any part thereof, and any loss or damage to any of the materials or other property used or employed in performing the work, including any loss or damage during transit or storage of any property or materials, including any property or materials furnished by the City, including reasonable attorneys' fees, awards, fines, or judgments.
- B. However, the Contractor shall not be obligated under this Contract to indemnify the City with respect to the sole negligence or willful misconduct of the City or its agents or employees or Design Engineer.
- C. The indemnity obligations of this Contract shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which otherwise exists by statute or under the common law of the State of Arizona, except those in conflict with the express terms of these General Conditions. The law of comparative negligence, as adopted by the State of Arizona, shall be binding upon the relationship between the parties, except as set forth herein.**
- D. The amount and type of insurance coverage requirements set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

41. ACCIDENT PREVENTION - EMERGENCY - AUTHORITY TO ACT

After the Contract Notice to Proceed has been issued through final acceptance of the Contractor's work, it shall be the Contractor's responsibility for protection and safety of the public and workers twenty-four (24) hours a day, seven (7) days a week. This responsibility will also be placed on the Contractor after final acceptance when the Contractor is on site performing any Guaranty/Warranty work.

Whenever, in the opinion of the Engineer, the Contractor has not taken sufficient precaution for the safety of the public or the protection of the work to be constructed under this Contract, or of adjacent structures or properly, and whenever, in the opinion of the Engineer, an emergency has arisen and immediate action is considered necessary, then the City, with or without notice may provide suitable protection by causing work to be done and materials to be furnished and placed. The cost of such work and materials shall be borne by the Contractor, and if the same is not paid on presentation of the bills, such costs will be deducted from any amounts due or to become due to the Contractor. The performance of such emergency work shall not relieve the Contractor of responsibility for any damage that may occur.

42. PROTECTION OF WORK

The Contractor, at no additional expense to City, shall at all times safely guard and protect his own Work; provide, erect, and maintain suitable barriers around all improvements, work areas, excavations, or obstructions to prevent accidents; and provide, place, and maintain during the night sufficient lights, signals, and signs for this purpose on or near the Work. The Contractor shall at all times, until its completion and final acceptance, protect his Work apparatus, equipment, and material from accidental or any other damage; and make good any damages thus occurring at no additional cost to the City.

43. PROTECTION OF PROPERTY

- A. The Contractor, at no additional expense to the City, shall at all times (1) safely guard the City's property and abutting or adjacent property from injury, loss, or damage in connection with the Contract; (2) protect by false work, braces, shoring, or other effective means all buildings, foundations, walls, fences, property pins and other property along his line of Work, or affected directly by his Work, including, but not limited to the City's property, against damage; (3) cover or otherwise protect stockpiles of materials to avoid damage to any property from such materials; and/or (4) repair, replace, or make good any such damage, loss or injury, unless such is caused directly by the City or his duly authorized representatives.
- B. The Contractor shall exercise care to protect from injury all water lines, sanitary sewer lines, gas mains, telephone cables, electric cables, services pipes, and other utilities or fixtures which may be encountered during the progress of the Work. All utilities and other service facilities or fixtures if damaged, shall be repaired by the Contractor without additional compensation.
- C. The Contractor shall personally check and verify utility information on the plans. Where existing utilities or structures are shown on the plans or drawings, they are believed to be accurate but are not guaranteed to be such or that these are the only utilities or structures in the construction area. Protection is completely the responsibility of the Contractor and he must satisfy himself as to the existence and location of all utilities and structures.
- D. The Contractor shall give written notice of at least forty-eight (48) hours before breaking ground, to all persons, superintendents, inspectors, or those otherwise in charge of property, streets, water, gas, or sewer pipes, telephone or electrical cables, railroads, or otherwise who may be affected by the Contractor's operation in order that they may remove any obstruction for which they are responsible and have a representative on the site to see that their property is properly protected.

44. PROTECTION OF PERSONS

- A. The Contractor shall:
 - 1. At all times protect the lives and health of his employees under the Contract.
 - 2. Take all necessary precautions for the safety of all persons on or in the vicinity of the Work site.
 - 3. Comply with all applicable provisions of Federal, State, and Municipal safety laws and building codes.

4. Comply with all pertinent provisions of the "Manual of Accident Prevention on Construction" issued by the Associated General Contractors of America, Inc., latest edition, to prevent accidents or injury to persons, on, or adjacent to the premises where the Work is being performed. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of persons and shall post danger signs warning against the hazards created by such features of construction as protruding nails, rod hoists, well holes, elevator hatchways, scaffolding, window openings, stairways, and falling materials; and he shall designate a responsible member of his organization on the Work site whose duty shall be the prevention of accidents.
- B. The Contractor shall comply with all provisions of the "Occupational Safety and Health Act" (OSHA), including any amendments thereto and rules and regulations issued pursuant thereto, applicable to the Work and performance of the Contract. Whereas state in which Work is performed has passed legislation bearing on Occupational Safety and Health, such legislation and amendments thereto, together with rules and regulations issued pursuant thereto shall be complied with by the Contractor.

45. POTENTIALLY DANGEROUS WORK

- A. When the use of explosives, driving, or removal of piles, wrecking, excavation Work or other similarly potentially dangerous Work is necessary for the prosecution of the Work, the Contractor shall exercise the utmost care so as not to endanger life or property. The Contractor shall be fully responsible for any and all damages, claims, and for the defense of any actions against the City resulting from the prosecution of such Work in connection with or arising out of the Contract.
- B. The Contractor shall notify each private and public utility company or other owner of property having structures or improvements in proximity to the site of the Work, of his intent to perform potentially dangerous Work. Such notice shall be given sufficiently in advance to enable the companies or the owners of property to take such steps as they may deem necessary to relieve the Contractor of responsibility for all damages, claims, or the defense of any actions against the City resulting from the performance of such Work in connection with or arising out of the Contract.
- C. All explosives shall be stored in a secure manner and all storage places shall be marked clearly "EXPLOSIVES-KEEP OUT", and shall be in the care of competent watchmen at all times. Blasting Permits must be obtained from the Sedona-Oak Creek Fire District, 2860 Southwest Drive, Sedona, AZ 86336 (602) 282-6800.
- D. If blasting is required, building inspection reports must be conducted for properties within 150-feet of the proposed blasting area. For affected structures that are to remain after the construction, the report shall consider and document the existing structural and architectural condition of those structures. The intent of this report is to document the condition of such structures before construction, obtain agreement with the property owner, and use for comparison purposes after construction is completed, to ensure the structure was not damaged from construction activities. Blasting will only be considered if rock excavating equipment equal to or better than that provided by "drum-cutters" (see www.drumcutters.com), would not be effective for excavation.

46. PATENTS, COPYRIGHTS, AND ROYALTIES

- A. The Contractor shall assume all costs arising from the use of any patented article, material, device, equipment or process used or furnished by him in connection with, or incorporated in the Project. The Contractor shall save, and hold harmless the City and all officers and agents thereof from all damages, costs and expenses in law or equity (including attorneys' fees, expert witness fees, court costs, and other expenses of litigation) that may come at any time, arise or be set up by reason of any infringement or alleged infringement of any patent rights as a consequence of the installation or use of any such article, material, device, equipment or process in or about the Project. The Performance Bond required by Arizona Revised Statutes Section 34-221 shall be deemed to apply expressly to this provision of the Contract.
- B. Should the Contractor, his agent, employer or any of them be enjoined from furnishing or using any invention, article, material or plans supplied or required to be supplied or used under this Contract, the Contractor shall promptly pay such royalties and secure the requisite licenses; or, subject to acceptance by the City, substitute other articles, materials or appliances in lieu thereof which are of equal efficiency, quality, finish, suitability and market value to those planned or required under the Contract. Descriptive information of these substitutions shall be submitted to the Engineer for determination of general conformance to the Design concept and the Construction Contract. Should the City elect to refuse a substitution, the Contractor agrees to pay such royalties and secure such valid licenses as may be requisite for the City, his representatives, agents and employees or any of them, to use such invention, article, material or appliance without being disturbed or in any way interfered with by any proceeding in law or in equity on account thereof.

47. CHANGE ORDERS FOR CHANGED OR EXTRA WORK

- A. The City reserves the right at any time during the progress of the Work to make necessary alterations of, deviations from, additions to, or deletions from the Contract, or may require the performance of extra Work neither covered by the specifications nor included in the Proposal, but forming a part of the Work contracted for; provided however, the Contractor shall not proceed with any such change or extra Work without a written Change Order approved by the City. Until a resolution is reached by the City and the Contractor, the Contractor is to continue work on the project. Additional time may or may not be added to the projected (and approved) contract end date. Such changes or extra Work shall in no way injuriously affect or invalidate the Contract or the Contractor's bond, but the difference in cost shall be added to or deducted from the amount of the Contract, as the case may be. Adjustments, if any, in the amounts to be paid to the Contractor by reason of any such change or extra work shall be determined by one of the following methods in the order as listed:
 - 1. Method A Unit prices contained in the Contract Documents for the same type or class of work.
 - 2. Method B By an acceptable unit price proposal from the Contractor.
 - 3. Method C By an acceptable lump sum price proposal from the Contractor.
 - 4. Method D If neither Method "B" or "C" can be agreed upon before the change or extra work is started, then the Contractor shall be paid the "actual field cost" of the work plus eighteen percent (18%) or twelve percent (12%) as stated herein below.

- B. Whenever any change or extra work is to be done, for which unit prices for the same type or class of work are contained in the Contract Documents, such work shall be done and shall be measured and paid for pursuant to Method A herein above set forth and the other applicable portions of the Contract Documents, subject to Article 30 of the General Conditions. Full compensation for taxes, overhead and other costs shall be considered as included in the unit prices bid.
- C. Methods B and C shall include an itemized cost breakdown including overhead and profit. In determining the amount payable to the Contractor, an additional five percent (5%) may be added to the amount payable to a Subcontractor, but no "pyramiding" or additional percentage shall be authorized for any work done by a Subcontractor. This percentage may be increased to seven percent (7%) if the Contractor provides proof that it is paying transaction taxes for the subcontractor. The subcontractor percentage shall be considered as compensation for taxes paid on the subcontracted work, and any other costs or profit associated the subcontracted work. The taxes shall not be separately shown as a cost in the amount to which the seven percent (7%) is applied. Full compensation for taxes, overhead and other costs shall be considered as included in the unit price or lump sum price accepted whether such items are explicitly itemized or not.
- D. When any change or extra work is performed under "Method D", the term "actual field cost" of such change or extra work is hereby defined to be and shall include:
1. The actual wages paid to all the Contractor's workmen such as foremen, equipment operators, mechanics, and laborers, for the time actually performing the change or extra work. Superintendents are considered as compensated for in the overhead.
 2. All of the Contractor's materials and supplies incorporated in the change or extra work, unless the total cost for a particular material or supply is less than twenty dollars (\$20). Materials and supplies with a total cost of less than twenty dollars (\$20) will be considered as compensated for in the overhead and profit allowance.
 3. All machinery and equipment for the time actually employed or used in the performance of the changed or extra work shall be based on the submitted and approved schedule of equipment rates, unless the hourly cost for the machinery or equipment is less than twenty-five dollars (\$25.00) per hour or one hundred fifty dollars (\$150) per day. Items with rates less than twenty-five dollars (\$25.00) per hour or one hundred fifty (\$150) per day will be considered as compensated for in the overhead and profit allowance. The contractor shall submit machinery and equipment rates for approval prior to Start of Construction.
 4. Any transportation charges necessarily incurred in connection with any equipment authorized by the City for use on said change or extra work, but which is not already on site provided the transportation cost exceeds twenty-five dollars (\$25.00).
 5. All power, fuel, lubricants, water, and similar operating expenses as well as other expendable materials.
 6. Incidental expenses incurred as a direct result of such change or extra work, including payroll taxes and a pro rata portion of premium in the Performance Bond and Labor and Materials Payment Bond, and where the premiums therefore are based on payroll costs, on Public Liability and Property Damage insurance, Workmen's Compensation insurance, and Occupational Disease Disability insurance, Builder's Risk, and other insurance required by the Contract. **In order to be allowed these amounts shall be provided in writing when submitting the first request for a progress payment. These amounts**

payable by the City shall not change for the duration of the contract. The twelve percent (12%) mark-up shall not apply to these items.

7. No repairs, replacements, or other forms of overhead expense shall be included in "actual field costs".
 8. The Engineer may adjust the amount due under this method based upon a reasonable estimate of the actual cost of performing deleted work in the case of a change in work method or work material. In this case the amount due shall be the difference between the estimated cost to perform work per the original method based on conditions known at the time of the change to the extent such conditions are not the basis for a change, and the method proposed to be used plus the unit bid price for the original method.
- E. The Engineer may direct the form in which the accounts of the actual field costs shall be kept and may also specify in writing, before the work commences, the method of doing the work and the type and kind of machinery and equipment, if required, which shall be used in the performance of any change or extra work under method "D". In the event that machinery and heavy construction equipment are required for such change or extra work, the authorization and basis of payment for the use thereof shall be stipulated in the written Change Order.
- F. The twelve percent (12%) or eighteen percent (18%) of the "actual field cost" to be paid to the Contractor shall cover and be full compensation for the Contractor's profits, overhead, superintendence, and field and home office expense, and all other elements of cost not embraced within the "actual field cost" as defined herein. Eighteen percent (18%) shall be payable for Contractor costs for that portion of total change orders less than or equal to thirty thousand dollars (\$30,000). For that portion exceeding thirty thousand dollars (\$30,000) the twelve percent (12%) factor shall be applied to Contractor costs. In determining the amount payable to the Contractor, an additional percentage per C above may be added to the amount payable to a Subcontractor, but no "Pyramiding" or additional percentage shall be authorized for any work done by Subcontractors.
- G. No claim for any change or extra work of any kind shall be allowed unless the work is ordered and approved in writing by the City in the form of a Change Order.
- H. No anticipated profits shall be allowed for work deleted.
- I. If the City has work accomplished by other sources due the Contractor's failure to perform required work it may deduct an additional five hundred dollars (\$500) or five percent (5%) of the cost of accomplishing the work, whichever is greater, in addition to the cost of accomplishing the work using other sources. The City shall consider this additional amount as compensation for overhead and administration.
- J. The Contractor shall furnish satisfactory bills, payrolls, and vouchers covering all items of cost and when requested by the City, give the City access to accounts relating thereto.
- K. Any Change or extra work shall be considered a part of the Contract, subject to all of its terms, conditions, stipulations, review, guaranties, and tests may be performed without notice to the surety on the Contractor's bond. The Contractor and surety hereby agree to these provisions.
- L. The following language shall apply to all change orders:

“THIS CHANGE ORDER CONSTITUTES FULL, FINAL, AND COMPLETE COMPENSATION TO THE CONTRACTOR FOR ALL COSTS, EXPENSES, OVERHEAD, PROFIT, AND ANY DAMAGES OF EVERY KIND THAT THE CONTRACTOR MAY INCUR IN CONNECTION WITH THE WORK DESCRIBED IN THIS CHANGE ORDER, INCLUDING ANY IMPACT ON THE DESCRIBED WORK OR ON ANY OTHER WORK UNDER THE CONTRACT, ANY CHANGES IN THE SEQUENCES OF ANY WORK, ANY DELAY TO ANY WORK, ANY DISRUPTION OF ANY WORK, ANY RESCHEDULING OF ANY WORK, AND ANY OTHER EFFECT ON ANY OF THE WORK UNDER THIS CONTRACT. BY THE EXECUTION OF THIS CHANGE ORDER, THE CONTRACTOR ACCEPTS THE CONTRACT PRICE CHANGE AND THE CONTRACT COMPLETION DATE CHANGE, IF ANY, AND EXPRESSLY WAIVES ANY CLAIMS FOR ANY ADDITIONAL COMPENSATION, DAMAGES OR TIME EXTENSIONS, IN CONNECTION WITH THE DESCRIBED WORK.”

- M. The Contractor shall not be entitled to adjustments in contract price or contract time related to submittal of any cost estimates.

48. PROCEDURE FOR REQUESTING CHANGE ORDERS –EXTRA

- A. In case any instructions, either oral or written, appear to the Contractor to involve a change or extra work for which, in his opinion, he should receive extra compensation, he shall make a written request to the Engineer for a written Change Order authorizing such change or extra work. Should a difference of opinion arise as to what does or does not constitute a change or extra work, or concerning the payment thereof, and the City insists on conformance, the Contractor shall proceed with the work after presenting written notice of claim for extra cost to the City and shall keep an accurate account of the "actual field cost" thereof as provided for in Method "D" under "Changed or Extra Work". The Contractor shall thereby not waive any right he might have to compensation for the claimed "extra cost" in connection with a change or extra work. The matter shall be submitted to the City for final determination as to whether or not a change or extra work was involved, and if so, the amount due to the Contractor.
- B. Any claims for extra cost pursuant to this section, together with supporting documents and receipts, must be filed within ten (10) consecutive calendar days after performing the work for which extra cost is claimed. The City shall have the right to reject any claim for extra cost if the foregoing procedure is not followed.
- C. In giving instructions, the Engineer shall have the authority to make minor changes that do not involve extra cost or time of performance and are not inconsistent with the design concept and purposes of the contracted work; but otherwise, except in an emergency endangering life or property, no change or extra work shall be performed unless authorized by a written "Change Order" approved by the City Council or its designee in accordance with the City Code, and no claim for extra cost shall be valid unless so approved, except as otherwise provided herein.

49. PROCEDURE FOR REQUESTING CHANGE ORDERS--EXTRA TIME

- A. The Contract time may be changed only by a change order either alone or in conjunction with other changes. Any claim for an extension of Contract time shall be based on written notice delivered to the Engineer within seven days of the occurrence of the event giving rise to the

claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless Engineer allows an additional period of time to ascertain more accurate data. Notice of the extent of the claim must state the cause of the delay, the date of occurrence causing the delay, and the amount of additional time requested. Requests for extensions of time shall be supported by all evidence reasonably available or known to the Contractor, which would support the extension of time requested. If the Contractor is requesting an extension of time because of weather, he shall supply daily written reports to the Engineer describing such weather and the work which could not be performed that day because of such weather or conditions resulting there from and which he otherwise would have performed. The Engineer's acceptance of the daily reports shall not be deemed an admission of the Contractor's right to receive an extension of time or waiver of the City's right to strictly enforce the time provisions contained in the Contract Documents. Requests for extensions of time failing to include the information specified in this Article and requests for extension of time which are not received within the time specified above shall result in the forfeiture of the Contractor's right to receive any extension of time requested. Any change in the Contract time resulting from any such claim shall be incorporated in a change order. The percentages specified in Section 38 and 47 G above shall be considered to include full compensation for each day or portion thereof of extra time.

- B. The Contract time will be extended in an amount equal to time loss due to delays beyond the control of Contractor if a claim is made there for as provided in paragraph A. Such delays shall include, but not be limited to, acts or neglect by City or others performing additional work, or to fires, floods, labor disputes, epidemics, abnormal weather conditions, or act of God. No extension of the Contract time will be granted where the delay is attributable to a Subcontractor, manufacturer, fabricator, supplier or distributor or any other party performing services or furnishing material or equipment on behalf of the Contractor unless such party's delay is attributable to one of the above enumerated causes. Time limits concerning substantial completion and final completion as stated in the Contract Documents are of the essence.
- C. An extension of time may be granted by the City after the expiration of the time originally fixed in the Agreement or as previously extended, and the extension so granted shall be deemed to commence and be effective from the date of such expiration. However, such extension shall not be deemed to be a release of any of the City's rights under the Contract Document unless expressly stated as such.

50. DIFFERING SITE CONDITIONS

If conditions or objects are encountered at the site which are (1) sub-surface or otherwise concealed and which differ materially and substantially from those indicated or anticipated in the Contract Documents or (2) are of an unusual nature, which differ materially and substantially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice, in writing, by the Contractor shall be given to the City promptly before conditions are disturbed and in no event later than 24 hours after first observance of the conditions. The City shall promptly investigate such conditions and, if they differ materially and substantially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the work, shall provide an equitable adjustment in the Contract Amount or Contract Period, or both as per Sections 47 through 49 of these General Conditions. If the City determines that the conditions at the site are not materially and substantially different from those indicated in the Contract

Documents and that no change in the terms of the Contract is justified, the City shall so notify the Contractor in writing, stating the reasons. No claim by the Contractor for an equitable adjustment shall be allowed if asserted after final payment has been made under this agreement. Weather, and the effects of weather on surroundings, surface, or subsurface are to be anticipated and do not constitute a differing condition. No contract change, which results in a benefit to the Contractor, shall be allowed unless the contractor has provided the required written notice. No contract adjustment will be allowed under this section for any effects caused on unchanged work.

51. WARRANTY PERIOD

- A. Besides guarantees required elsewhere, the Contractor shall and hereby does guarantee all work for a period of two (2) years after the date of final acceptance of the work by the City and shall repair and replace any and all work together with any other work, which may be displaced in so doing, that may prove defective in workmanship or materials within the two-year period from the date of final acceptance, without expense whatsoever to the City, ordinary wear and tear and unusual abuse or neglect excepted. If the Contractor is required to repair or replace any portion of the Project pursuant to the two-year guarantee provided by this section, the repair or replacement shall similarly be guaranteed for an additional one-year period from the date of completion of the repair. In the event of failure to comply with the above mentioned conditions, within a week (seven consecutive days) after being notified in writing by the City, the City is hereby authorized to proceed to have the defects repaired and made good at the expense of the Contractor, who hereby agrees to pay the cost and charges therefore immediately upon demand by the City. In case of emergency, where, in the opinion of the City, delay could cause serious loss or damage, repairs may be made without notice being sent to the Contractor and the expenses in connection therewith shall be charged to the Contractor.
- B. The Contractor guarantees to the City that all materials and equipment furnished under this Contract will be new and of good and sufficient quality, free from faults and defects as is necessary to complete the project as required by the plans and specifications.
- C. The City and the Contractor agree that the guarantee on the equipment possessed and used by the City, in accordance with Article 34 of these General Conditions, shall commence on the date that the City takes possession of the equipment and so notifies the Contractor in writing. City and Contractor further agree that such taking possession and use shall not be deemed as acceptance of any part of the work. Take-over of equipment may occur when such equipment can be put into routine service on a permanent basis at City's discretion.

52. AUTHORITY OF ENGINEER

- A. The Engineer shall furnish engineering services during construction of the work to the extent provided in the Contract Documents. He shall observe and review the work in the process of construction or erection. Compliance with the Contract Documents shall be the Contractor's responsibility notwithstanding such observation or review. The Engineer has authority to recommend suspension of the work when it appears such suspension may be necessary to accomplish the proper implementation of the intent of the Contract Documents. The authority to observe, review, or recommend suspension of all or any portion of the work, or exercise such other authority as may be granted by the Contract Documents, shall not be construed or interpreted to mean supervision of construction, which is the Contractor's responsibility, nor make the Engineer responsible for providing a safe place for the performance of work by the

Contractor or by the Contractor's employees or those of suppliers or subcontractors or for access, visits, use, work, travel, or occupancy by any other person. The provisions of MAG Sections 104.1.4 and 104.2.5 as contained in the 2012 edition apply to this contract.

- B. The Engineer shall have authority to reject any or all work, materials, or equipment, which do not conform to the Contract Documents, and to decide technical questions, which arise in the execution of the work. The Engineer shall determine the amount, quality, acceptability, and fitness of the several kinds of work, materials, equipment, and supplies which are to be paid for under the Contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Engineer's estimates and decisions shall be final and conclusive, except as otherwise expressly provided. In case any question shall arise between the parties to the Contract relative to the Contract Documents, the determination or decision of the Engineer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under the Contract affected in any manner or to any extent by such question.

53. DECISIONS OF THE CITY

If the Contractor is not in agreement with any final decision of the Engineer, then he may appeal, in writing, such decisions to the City Manager, who shall within a reasonable time after presentation, make decisions in writing on claims properly made by the Contractor. The appeal shall contain the final decision of the Engineer as an attachment, or in the absence of such final decision a copy of a certified letter sent to the Engineer, at least fifteen (15) working days prior to the appeal, requesting such a final decision in writing. The decision of the City Manager shall be regarded as final.

54. TEMPORARY SUSPENSION OF THE WORK

- A. The City Manager may, upon the recommendation of the Engineer, or by the Manager's own determination, suspend the work.
- B. Should the discovery of a potential archaeological or historic resource occur during construction, the Contractor shall cease work at that site, immediately notify the Engineer, and shall not proceed until instructed to do so by the City. In the event such a suspension of the work occurs, the provisions of Article 49 shall apply to extend the time for final completion of the work.

55. AUTHORITY AND DUTIES OF CITY'S FIELD REPRESENTATIVE

- A. Inspectors may be placed on the work to keep the City informed as to the progress of the work and the manner in which it is being done; to keep records; act as liaison between the Contractor and the City; and to call the attention of the Contractor to any deviations from the Contract Documents. However, failure of the inspector to call the attention of the Contractor to faulty work or deviations from the Contract Documents shall not constitute acceptance of said work.
- B. The inspector cannot control how the material is used; therefore, the responsibility for its safety and proper use shall be the Contractor's. Until the job is finally completed, the Contractor may do work that changes or modifies work previously done, and even though at any given time, a piece of work might be well done and acceptable in quality, the

responsibility for keeping it in that condition until the work is complete is the sole responsibility of the Contractor. For this reason, it is impossible to accept, finally, any portion of a project until the project as a whole is accepted and control of said project is transferred from the Contractor by final official written acceptance by the City.

- C. **Any personal assistance which an inspector may give the Contractor will not be construed as the basis of any assumption of responsibility in any manner, financial or otherwise, by the inspector or the City.**
- D. The inspector is not and does not purport to be a Safety Engineer and is not engaged in that capacity by the City and shall have neither authority nor the responsibility to enforce construction safety laws, rules, regulations, procedures, or the safety of persons on and about the construction site.
- E. The presence or absence of an inspector on any job will be at the sole discretion of the City, and such presence, or absence of an inspector will not relieve the Contractor of his responsibility to obtain the construction results specified in the Contract Documents.
- F. The inspector is not authorized to approve or accept any portion of the work or to issue instructions contrary to the Contract Documents. Approvals, acceptance or instructions, when given, must be in writing and signed by the City. The inspector shall have authority to reject defective materials; however the failure of the inspector to reject defective material or any other work involving deviations from the Contract Documents shall not constitute acceptance of such work.
- G. Nothing in this subsection shall in any way be so construed as to require or to place responsibility for the method, manner or supervision of the performance of the work under this Contract upon the inspector, or the City. Such responsibility rests solely with the Contractor.

56. CHARACTER OF WORKERS, METHODS, AND EQUIPMENT

- A. The Contractor shall at all times employ sufficient skilled labor in accordance with Federal, State and local labor laws; and the proper equipment for completing the project in the manner and time required by the Contract. All equipment, which is proposed to be used on the project, shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be used such that it will not damage property adjacent to the work area.
- B. Any person employed by the Contractor or any Subcontractor who, in the opinion of the Engineer, does not perform his work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Engineer, be removed from the work by the Contractor or Subcontractor employing such person, and shall not be employed again in any portion of the work without the approval of the Engineer. Should the Contractor or Subcontractor fail to remove such person as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may suspend the work by written notice until such orders by the Engineer are followed by the Contractor. The Contractor or Subcontractor shall hold the City harmless from damages or claims for compensation that may occur in the enforcement of this section.

- C. The City may require submittal of Certified Payrolls at any time from the Contractor showing the employee names, addresses, Social Security Numbers, rates of pay, payments received, payroll deductions, occupational classification(s), and hours per day worked in such classification(s) for work performed on this project by employees. The contractor shall retain such records for the minimum time required by law or three (3) years after project completion, whichever is longer. The Contractor shall also be responsible to produce upon request from the City such payroll records from its subcontractors.

57. WARRANTY OF COMPLIANCE WITH STATE AND FEDERAL LAW

CONTRACTOR understands and acknowledges the applicability to it of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989. CONTRACTOR must also comply with A.R.S. § 34-301, "Employment of Aliens on Public Works Prohibited," and A.R.S. § 34-302, as amended, "Residence Requirements for Emps."

- A. Under the provisions of A.R.S. § 41-4401, CONTRACTOR hereby warrants to CITY that CONTRACTOR and each of its subcontractors will comply with, and are contractually obligated to comply with, all Federal Immigration laws and regulations that relate to their employees and A.R.S. § 23-214(A) (hereinafter "Contractor Immigration Warranty").
- B. A breach of the Contractor Immigration Warranty shall constitute a material breach of this contract and shall subject CONTRACTOR to penalties up to and including termination of this contract at the sole discretion of CITY.
- C. CITY retains the legal right to inspect the papers of any contractor or subcontractor employee who works on this contract to ensure that the contractor or subcontractor is complying with the Contractor Immigration Warranty. CONTRACTOR agrees to assist CITY in regard to any such inspections.
- D. CITY may, at its sole discretion, conduct random verification of the employment records of CONTRACTOR and any subcontractors to ensure compliance with Contractor's Immigration Warranty. CONTRACTOR agrees to assist CITY in regard to any random verification performed.
- E. Neither CONTRACTOR nor any subcontractor shall be deemed to have materially breached the Contractor Immigration Warranty if CONTRACTOR or any subcontractor establishes that it has complied with the employment verification provisions prescribed by sections 274A and 274B of the Federal Immigration and Nationality Act and the E-Verify requirements prescribed by A.R.S. § 23-214, Subsection A.
- F. The provisions of this article must be included in any contract that CONTRACTOR enters into with any and all of its subcontractors who provide services under this contract or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a contractor or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

58. QUALITY CONTROL AND TESTING

- A. The Contractor will support the Testing Company when contracted by the City for Quality Control and testing for specification compliance and assurance.

- B. During the progress, the work shall be subject to the review and observation of the City. The Contractor shall afford every reasonable facility and assistance to the City to make such review. If any work is covered up without approval or consent of the City, it will be uncovered for examination at the Contractor's expense.
- C. The fact that the City is on the job site shall not be taken as an acceptance of the Contractor's work or any part of it. The Contractor shall notify the City upon completion of his Contract, and the work shall be given final construction review by the City, and any tests and re-tests shall be witnessed by the City or his representative. If all parts of the work are acceptable and substantially comply with the intent of the Contract Documents, initial acceptance shall be made by the City. If parts of the work are not acceptable and require additional work or rework by the Contractor to complete the Project, such costs shall be borne by the Contractor.
- D. Contractor shall submit to the City, ten (10) days in advance of construction and without charge, samples or specifications of materials he proposes to use and shall not use these materials until he has received approval from the City.
- E. Contractor shall furnish tests and reports on tests of all materials, equipment and installations called for in the Contract Documents. The testing laboratory must be approved by the City and the Contractor shall pay the cost of the tests, and necessary re-tests, including all transportation charges unless otherwise provided by the Contract Documents.
- F. Required certificates of inspection, testing, or compliance shall be secured by the Contractor and promptly delivered by him to the Engineer. Certificates shall be provided within five (5) working days after the test is conducted. Each report shall indicate compliance with the specifications.
- G. The City reserves the right to perform additional inspections and testing deemed appropriate with their own forces or with outside consultants or testing agencies. Should such inspection or testing reveal work that is not in compliance with Contract Documents, such costs of inspection or testing, and any required rework shall be borne by the Contractor.
- H. Following is a summary of minimum frequency of testing the city shall require. If there are conflicts in the frequency of testing between this Section and the Technical Specifications, the stricter of the two will govern. This list is a partial list of major items of work, if an item is a part of the project and not listed the Contractor shall provide testing for that item. The Contractor shall provide the appropriate tests for the activities a part of the project. The City reserves the right to request a greater frequency for the testing.

The following frequencies are based on a maximum of 8" lifts. When the lifts are greater than 8", the frequency of testing shall increase proportionately with the increased depth of lift.

Activity	Frequency
Roadway Fills	1 each 300 ft per lift
AB Subgrade	1 each 300 ft per lift
AC Pavement	1 each 300 ft per lift
Trench Backfill	1 each 300 ft per lift

Concrete Curb & Gutter	4 cylinders per 50 cy concrete
Concrete Sidewalk	4 cylinders per 50 cy concrete

59. TERMINATION OF CONTRACT

- A. The City may, at any time, terminate the Contract at the City’s convenience and without cause. Such termination shall be effective upon receipt by Contractor of written notice from the City of such termination for the City’s convenience. Contractor shall cease operations as directed by the City in the notice of termination and take actions necessary, or that the City may direct, for the protection and preservation of the work. In the event of a termination for convenience, the Contractor shall be paid only the direct value of its completed work and materials supplied as of the date of termination, and Contractor shall not be entitled to anticipated profit or anticipated overhead or any other claim of damages from the City. Further, in the event a termination of the Contractor for cause is determined to have been without legal right, then the termination shall be deemed to have been a termination for convenience.

- B. If the Contractor refuses or fails to prosecute the work or any separable part thereof with such diligence as will ensure its completion within the time specified herein, or any extension thereof granted in the manner specified herein, or fails to complete the work within such time, or if the Contractor fails to comply with any written order of the Engineer or the City or fails to timely pay Subcontractors, material, men, or laborers, or if the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he or any of his Subcontractors should violate any of the provisions of the Contract, then the City may serve written notice upon the Contractor and his surety of its intention to terminate the Contract and, unless within ten (10) days after the service of such notice such violations of the Contract cease and satisfactory arrangements for the corrections thereof are made, the Contract shall without further notice, upon the expiration of said ten (10) days or such extensions thereof as may be expressly granted by the City in writing, cease and terminate.

- C. In the event of any such termination, the Contract shall be deemed terminated and not rescinded. Following such termination of the Contract, the City will take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, and finish the Project by whatever method the City may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished, or completion is permanently suspended by the City. If the unpaid balance of the Contract price exceeds the direct and indirect costs of completion of the project, including compensation for additional professional service, including but not limited to fees charged by the City's attorney, such excess shall be paid to the Contractor. If such costs or liquidated or actual damages as provided by this Contract exceed such unpaid balance, the Contractor shall pay the difference to the City. Such additional costs and any liquidated or actual damages due to the City under this Contract will be determined by the City Manager and be submitted to the City Council in the form of a Change Order to the Contract.

- D. Any extensions of time granted by Change Order or other extensions granted by the Council do not constitute a waiver of the City's right to terminate the Contract pursuant to this section for the Contractor's failure to complete the Project within the time specified in the Contract

and any authorized extensions thereto, nor do such extensions constitute a waiver of the City's right to collect liquidated damages.

- E. If the work is stopped by order of a court, public authority, or the City for a period of ninety (90) calendar days or more, through no act or fault of the Contractor, anyone employed by such Contractor or his Subcontractors, then the Contractor may terminate the Contract in accordance with these Contract Documents.

60. TIME IS OF THE ESSENCE

It is mutually understood and agreed by and between the parties to the Contract that in the execution of the same, time is an essential element of the Contract, and it is important that the work progress vigorously to completion.

61. LIQUIDATED DAMAGES

For each and every calendar day that work shall remain uncompleted after the time specified for the completion of the work in the Contract, or as adjusted by a change order, the sum per calendar day, as stipulated in the Advertisement for Bids, shall be deducted from any money due or to become due to the Contractor, not as forfeit or penalty, but as liquidated damages. This sum is fixed and agreed upon between the parties because the actual loss to the City and to the public caused by delay in completion will be impractical and extremely difficult to ascertain and determine. It is agreed that the City has made a good faith attempt to estimate the loss caused by any delays and that the estimate is incorporated in the sum, which is agreed to be reasonable. If the City allows the Contractor to complete or attempt to complete the work subsequent to the date of completion specified herein, such action shall not constitute a waiver by the City of the imposition of the liquidated damages provision as specified herein.

62. CITY'S REMEDIES CUMULATIVE AND NONWAIVER

No right or remedy conferred upon or reserved to the City by the Contract shall be considered exclusive of any other remedy or contractual right, but the same shall be distinct, separate, and cumulative, and shall be in addition to every other remedy existing at law or in equity or by statute; and every remedy given by the Contract to the City may be exercised from time to time as often as the occasion may arise, or as may be deemed expedient. No delay or omission on the part of the City to exercise any right or remedy arising from any default on the part of the Contractor shall impair such right or remedy or shall be construed to be a waiver of any such default or an acquiescence thereto, or otherwise affect the right of the City to enforce the same in the event of any subsequent breach or default by the Contractor.

63. SEVERABILITY CLAUSE, DISPUTE RESOLUTION, APPLICABLE LAW

- A. This Contract shall be governed by the laws of the State of Arizona, and venue for any litigation arising out of this Contract shall be in the Superior Court of the State of Arizona in and for the County of Coconino or the County of Yavapai, depending upon the location of the work, if the amount in dispute is in excess of \$5,000.00. If the amount in dispute is less than \$5,000.00, jurisdiction and venue shall lie in the nearest Justice of the Peace Court of the appropriate county. Arbitration shall not be an alternative method of settling disputes unless separately agreed upon in writing by the parties. This Contract shall not be construed to create any contractual relationship of any kind between the Engineering Dept., and the

Contractor or any Subcontractor, or between the City and any Subcontractor. During any dispute arising hereunder, the Contractor shall continue to perform all work in accordance with the Contract Documents. In the event of any dispute arising hereunder, the prevailing party in the resolution of such dispute shall be entitled to recover its attorney's fees and costs incurred.

- B. The provisions of this Contract shall be deemed to be severable, and if any term, phrase or portion of the Contract shall be determined to be unlawful or otherwise unenforceable, the remainder of the Contract shall remain in full force and effect.
- C. Any and all disputes relating to this Contract shall be subject to the provisions of Chapter 3.10 of the Sedona City Code. The City Code can be viewed on the City of Sedona website, as well as, the City Clerk's Office, City Hall, Sedona, Arizona.
- D. Notwithstanding the mediation provisions set forth in Paragraph 62.C above, either party may submit, by demand letter, correspondence or notice, to the other party, any claim, counterclaim, dispute or other matter in question between the Contractor and the City arising out of or relating to this Contract, the Contract Documents, the Plans, the Project or the work, or breach thereof, and such claim, counter claim, dispute or other matter in question shall be subject to and decided by arbitration in accordance with the Rules for Non-Administered Arbitration of Business Disputes (the "Rules") of the Center for Public Resources ("CPR") currently in effect, except as provided herein and except where modified by the provisions hereof.
- E. Any arbitration arising out of this Contract, the Contract Documents, the Plans, the Project or the work, or any breach thereof may include, by consolidation or joinder, or in any other manner, at the discretion of either the Contractor or the City, any other entities or persons whom the Contractor or the City, as the case may be, believes to be substantially involved in a common question of law or fact.
- F. All demands for arbitration and all responses thereto that include any monetary claim, must contain a statement that the total sum or value in controversy as alleged by the party making such demand or response is not more than \$150,000.00 (exclusive of interest and arbitration fees and costs). The arbitrators will not have jurisdiction, power or authority to consider or make findings except the denial of their own jurisdiction concerning any controversy where the amount at issue is more than \$150,000.00 (exclusive of interest and arbitration fees and costs) or to render a monetary award in response thereto against any party which totals more than \$150,000.00 (exclusive of interest and arbitration fees and costs). Notwithstanding the foregoing provisions, the parties may mutually agree to waive the jurisdictional limitations set forth in this sub-paragraph. In the event of such mutual waiver, all other provisions in this sub-paragraph shall apply.
- G. Demand for arbitration shall be filed with the other party in accordance with Rules. A demand for arbitration shall be made within a reasonable time after the claim, dispute, or other matter in question has arisen. In no event shall the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question could be barred by the applicable statute of limitations.
- H. In the event the amount in controversy is less than \$50,000.00 a sole arbitrator shall be appointed in accordance with Rules. In the event the amount in controversy is \$50,000.00,

the demanding party shall appoint one party-appointed arbitrator in its notice demand for arbitration. The responding party may within ten (10) days, appoint a second party-appointed arbitrator. The party-arbitrators shall appoint a third arbitrator in accordance with the Rules. If the party-arbitrators fail to appoint a third arbitrator, the third arbitrator shall be appointed in accordance with the Rules. If the responding party fails to appoint a second party-appointed arbitrator within the time so provided, selection of the second arbitrator shall be in accordance with the Rules.

- I. The decision of the arbitrators shall be in accordance with laws of the State of Arizona and the United States. The arbitrators shall prepare written findings of fact and conclusions of law upon which the decision and award shall be based. The arbitrators may award compensatory damages and attorneys' fees and costs to the prevailing party. The arbitrators shall have no authority to award consequential damages or punitive damages, and the parties hereby waive any claim to those damages to the fullest extent allowable by law.
- J. The demanding party shall select the locale of arbitration, but shall not choose a location greater than twenty-five (25) miles from the Project site.
- K. This agreement to arbitrate shall be specifically enforceable by either party under the prevailing laws of the State of Arizona and the United States. Any award rendered by the arbitrators shall be final and enforceable by any party to the arbitration, and judgment shall be made upon it in accordance with the applicable laws of any court having jurisdiction thereof. The arbitrators' decision shall be final and conclusive as to the facts. Either party may appeal manifest errors of law to a court of competent jurisdiction within fifteen (15) days of the award.
- L. Unless otherwise agreed in writing, and notwithstanding any other rights or obligations of either of the parties under the Contract, the Contractor and the City shall carry on with the performance of their respective duties, obligations and services hereunder during the pendency of any claim, dispute or other matter in question giving rise to arbitration or mediation, as the case may be. The City shall be under no obligation to make payments to the Contractor on or against such claims, disputes or other matters in question giving rise to arbitration or mediation, during the pendency of such arbitration or mediation or other proceedings to resolve such claims, disputes or other matters in question.

64. POTHOLING REQUIREMENTS

The Contractor shall pothole all existing utilities 1,000 feet ahead of trenching activities to allow adequate time and distance to allow for the adjustment of grade or location of the construction activities. The contractor shall pothole at least two (2) working days ahead of installing facilities such as manholes, sidewalks, storm drainage inlets, footing, headwalls, and similar non-longitudinal installations. The Contractor shall backfill the pothole after verifying the depth, size and location of the utility. If a potential conflict is encountered, temporarily plating the potholed utility will be allowed for review and coordination of a resolution of the conflict with the City and affected utilities representatives.

The City requests a minimum of five (5) working days notification of a potential conflict for marked utilities. This requirement does not relieve the Contractor of the responsibility to make the City aware of conflicts timely of the Contractor's awareness. If potholing 1,000 feet in advance of trenching activities has not been kept up and a conflict creates down time or delays in

work no extension of time or compensation for down time will be considered for that conflict.

65. UNMARKED UTILITY REPAIR

If in the course of work, a conflicting utility line that was not shown on the plans is discovered, the Contracting Agency will either negotiate with the owner of the Utility for relocation, change the alignment and grade of the trench or roadbed, provide encasement or sleeving, relocate the utility, or as a last resort, declare the conflict as “extra work” to be accomplished by the Contractor in accordance with Section 47 of these General Specifications. In the case of unmarked or incorrectly marked utilities the Contractor shall consider that responsibilities are per Arizona State Statutes Section 40 –360.

The Contractor shall contact the City and utility affected immediately upon damaging or breaking an unmarked utility. If an unmarked utility is found the Contractor shall take every precaution to not damage the utility and work around the conflict with the City and Utility representatives. No interpretation of this provision that changes the responsibility for non-located and improperly located utilities per Arizona State Statutes Section 40 –360 shall be valid.

66. UTILITY SEPARATION

The Contractor shall maintain as a minimum one (1) foot of vertical clearance and three (3) feet of horizontal clearance for all utility crossings. Water/sewer minimum separations will be two (2) feet vertical clear and six (6) feet horizontal clear. If less than one (1) foot but more than six (6) inches clearance is all that can be accommodated concrete encasement shall be provided.

67. NOTIFICATION TO RESIDENTS & COMMUNITY RELATIONS

The Contractor shall inform the residents along the construction area of the proposed work. This notification and community relations shall include, but not necessarily be limited to:

A. Mailings

The Contractor shall prepare a letter for mailing to the residents located adjacent to the project. This mailing will include a description of work to be done, work hours, date's for begin and end construction, Contractor representative contact name and phone number. The cost for the mailings shall be incidental to the project.

B. Informational Signage

The Contractor shall provide and install advance information signs and project information signs before beginning construction to inform the public of the forthcoming project, construction dates, and suggested alternate routes. Sign layout shall be as approved by the Engineer. Signs shall not be constructed or installed prior to approval by the Engineer for the designs, sizes and locations. The Contractor shall maintain the signs as necessary and update the information as requested by the Engineer. The information signs shall be shown on the traffic control plan. The cost for this work shall be included in the unit bid price for Mobilization.

C. Meetings

The Contractor may be requested to attend and participate in a pre-construction public meeting if deemed necessary by the Engineer. Meeting time, location and agenda will be determined by the Engineer. The cost for this meeting if held shall be incidental to the

project.

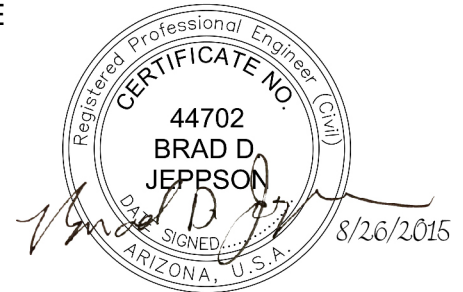
D. Driveway impact notification

The Contractor shall notify any resident or business of any access restrictions at least 48 hours prior to access restriction. Notification to residents is considered incidental to the projects activities and included in the unit price of the various activities.

INJECTION WELLS NO. 1 AND NO. 2 EQUIPPING DESIGN

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EXPIRES 06-30-2018

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SECTION 01110

SUMMARY OF WORK

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Identification and summary description of the Project, the Work, location, Owner-furnished products, activities by others, coordination, and early occupancy by Owner.
- B. Related section:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01230 - Alternates.

1.02 THE WORK

- A. The Work consists of construction of the following:
 - 1. Reservoir and wet pit pump station,
 - 2. Cartridge filter facility (installation only-equipment has been pre-procured),
 - 3. Sodium hypochlorite on-site generation facilities (installation only-equipment has been pre-procured),
 - 4. Equipping two injection wells,
 - 5. Well site facilities,
 - 6. Yard piping,
 - 7. Electrical and communication facilities,
 - 8. SCADA programming, and
 - 9. Repair and reconstruction of existing improvements affected by the Work, and incidentals for complete and usable facility.
 - 10. Part of the above work is an additive alternate (see Specification 01230).
- B. Except as specifically noted otherwise, provide and pay for:
 - 1. Insurance and bonds.
 - 2. Labor, materials, and equipment.
 - 3. Tools, equipment, and machinery required for construction.
 - 4. Utilities required for construction.
 - 5. Temporary facilities including sheeting and shoring.
 - 6. Traffic control and dust control measures.
 - 7. Other facilities and services necessary for proper execution and completion of the Work.

- C. Secure and pay for all permits required for the Work including OSHA excavation permits, Department of Transportation permits, government fees, and licenses.
- D. Comply with codes, ordinances, regulations, orders, and other legal requirements of public authorities having bearing on the performance of the Work.

1.03 LOCATION OF PROJECT

- A. The Work is located at the Sedona Wastewater Reclamation Plant (WWRP), 7500 West State Route 89A, Sedona, Arizona 86336 (between mile posts 365 and 366).

1.04 OWNER ASSIGNED SUBCONTRACTORS

- A. Assignment of subcontractors by Owner is not anticipated.

1.05 OWNER FURNISHED EQUIPMENT

- A. Owner will furnish:
 - 1. Sodium hypochlorite on-site generation system equipment, as defined in the Parkson submittal for the Maximos SM-45 system.
 - 2. Harmsco Cartridge filter housings and elements, as defined in the Harmsco cartridge filter submittal.
- B. Owner will:
 - 1. Arrange for and deliver necessary shop drawings, product data, and samples to Contractor.
 - 2. Arrange and pay for product delivery to site in accordance with construction schedule.
 - 3. Deliver supplier's bill of materials to Contractor.
 - 4. Inspect deliveries jointly with Contractor.
 - 5. Submit claims for transportation damage.
 - 6. Arrange for replacement of damaged, defective, or missing items.
 - 7. Arrange for manufacturer's warranties, bonds, service, and inspections.
- C. Contractor's responsibility for Owner-furnished products:
 - 1. Reviewing shop drawings, product data, and samples.
 - 2. Submitting notification of discrepancies or anticipated problems.
 - 3. Inspecting products jointly with Owner and recording shortages, and damaged or defective items.
 - 4. Handling products at site, including uncrating and storage.
 - 5. Protecting products from damage.
 - 6. Installing, including assembly, connections, adjustments, tests, and finish products in accordance with Contract Documents.
 - 7. Providing operating oils, lubricants, and incidental materials required for complete installation.
 - 8. Repairing or replacing items damaged after receipt until date of Substantial Completion of the Work by Owner.
- D. When Owner fails to deliver products in accordance with accepted Construction Schedule, adjustments will be made to Contract Times and Contract Price as stipulated in General Conditions.

1.06 ACTIVITIES BY OTHERS

- A. OWNER, utilities, and others may perform activities within Project area while the Work is in progress.
 - 1. Schedule the Work with Owner, utilities, and others to minimize mutual interference.
- B. Activities by others which may affect performance of work include:
 - 1. WWRP Upgrades project
 - 2. Bar Screen Replacement
 - 3. Wetlands Viewing Pier
- C. Cooperate with others to minimize interference and delays.
 - 1. When cooperation fails, submit recommendations and proceed according to Owner recommendations.
- D. When the Work depends for proper execution or results upon work performed by others, inspect and promptly report apparent discrepancies or defects in work performed by others.

1.07 COORDINATION OF WORK

- A. Maintain overall coordination of the Work.
- B. Obtain construction schedules from each subcontractor, and require each subcontractor to maintain schedules and coordinate modifications.

1.08 EARLY OCCUPANCY OF PORTIONS OF WORK

- A. Owner's partial utilization of portions of Work prior to final acceptance of the completed Work will be made.
- B. Certificates of Substantial Completion will be executed for each designated portion of Work prior to Owner occupancy.
 - 1. Such certificate of Substantial Completion will describe the portion of the Work to be occupied by Owner, items that may be incomplete or defective, date of occupancy by Owner, and other information required by Owner and Contractor.
 - 2. Portions of Work to be occupied prior to final completion, which will require Certificates of Substantial Completion
 - a. None
- C. After Owner occupancy, allow access for Owner's personnel, access for others authorized by Owner, and Owner operation of equipment and systems.
- D. Following occupancy, Owner will:
 - 1. Provide power to operate equipment and systems.
 - 2. Repair damage caused by Owner's occupancy.

1.09 ALTERNATES

- A. See Section 01230 for explanation of Alternates.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01116

CONTRACT DOCUMENTS LANGUAGE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Explanation of arrangement, language, and reference standards.
- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01600 - Product Requirements.

1.02 REFERENCES

- A. Construction Specifications Institute (CSI):
 - 1. Project Resource Manual.
 - 2. MasterFormat™.
 - 3. SectionFormat™.
 - 4. PageFormat™.

1.03 PROJECT MANUAL ARRANGEMENT

- A. Document and Section numbers used in Project Manual, and Project Manual arrangement are in accordance with CSI MasterFormat™, except where departures have been deemed necessary.
- B. Sections are written in CSI SectionFormat™, Three-Part Section Format, except where departures have been deemed necessary.
- C. Page format for Sections in the Project Manual is in PageFormat™, except where departures have been deemed necessary.

1.04 PROJECT MANUAL LANGUAGE

- A. Specification Section Paragraphs entitled "Section Includes" summarize briefly what is generally included in the section. Requirements of Contract Documents are not limited by "Section Includes" paragraphs. Specifications have been partially streamlined by intentionally omitting words and phrases, such as "the Contractor shall," "in conformity therewith," "shall be" following "as indicated," "a," "an," "the" and "all." Assume missing portions by inference.

- B. Phrase “by Engineer” modifies words such as “accepted,” “directed,” “selected,” “inspected,” and “permitted,” when they are unmodified.
- C. Phrase “to Engineer” modifies words such as “submit,” “report,” and “satisfactory,” when they are unmodified.
- D. Colons (:) are used to introduce a list of particulars, an appositive, an amplification, or an illustrative quotation:
 - 1. When used as an appositive after designation of product, colons are used in place of words “shall be.”
- E. Word “provide” means to manufacture, fabricate, deliver, furnish, install, complete, assemble, erect in place, test, render ready for use or operation, including necessary related material, labor, appurtenances, services, and incidentals.
- F. Words “Contractor shall” are implied when direction is stated in imperative mood.
- G. Term “products” includes materials and equipment as specified in Section 01600.

1.05 REFERENCE STANDARDS

- A. Use only applicable portions of referenced standards, ignoring payment stipulations and other provisions which change the duties of the Engineer or Owner as described in the Contract Documents.
- B. Equate terms relating to designer to “Engineer.”
- C. Notify Engineer when referenced standard, code, or specification conflicts with Contract Documents.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01140

WORK RESTRICTIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Requirements for sequencing and scheduling the Work affected by existing site and facility, work restrictions and coordination between construction operations and plant operations, including:
 - 1. Access to site.
 - 2. Use of site.
 - 3. Use of premises.

- B. Related Sections
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01110 - Summary of Work.
 - b. Section 01352 - Alteration Project Procedures.
 - c. Section 01500 - Temporary Facilities and Controls.
 - d. Section 01756 - Commissioning and Process Start-up.

1.02 SUBMITTALS

- A. Baseline Schedule with MOP tasks.
- B. Method of Procedure (MOP) Form.
- C. Method of Procedure (MOP) Log.
- D. Progress Schedule with MOP tasks.

1.03 GENERAL CONSTRAINTS ON SEQUENCE AND SCHEDULING OF WORK

- A. Wastewater projects:
 - 1. The Sedona Wastewater Reclamation Plant (WWRP) is the City of Sedona's only means of treating domestic and industrial wastewater within the sewer service area. Impairing the operational capabilities of this treatment plant will result in serious environmental damage and monetary fines.
 - 2. Conduct work in a manner that will not impair the operational capabilities of essential elements of the treatment process or reduce the capacity of the entire treatment plant below levels sufficient to treat the quality of raw wastewater to the water quality limitations specified in the discharge permit.

3. The status of the treatment plant shall be defined as "operational" when it is capable of treating the entire quantity of wastewater received to the water quality limits specified in the Aquifer Protection Permit (APP).
- B. Work sequence and constraints:
1. Utilize description of critical events in work sequence in this Section as a guideline for scheduling and undertaking the Work.
 2. Work sequence and constraints presented do not include all items affecting completion of the Work, but are intended to describe critical events necessary to minimize disruption of the existing facilities and to ensure compliance with Aquifer Protection Permit requirements.

1.04 INTERRUPTION OF TREATMENT PROCESSES

- A. Execute the Work while the existing facility is in operation.
- B. Indicate required shutdowns of existing facilities or interruptions of existing operations on Progress Schedule. Shutdowns will be permitted to the extent that existing operation of the plant will not be jeopardized and identified constraints are satisfied.
- C. Submit notification of required shutdowns of existing facilities at least 30 calendar days, whichever is greater, prior to the planned date of shutdown.
- D. The Engineer and the Plant Personnel will evaluate the request based on the plant's ability to reliably meet capacity demands.
- E. Do not begin alterations until Owner's permission has been received. Denial of a requested alteration or shutdown for necessary operational reasons or non-conformity with design intent shall not be a reason for a delay claim or additional compensation.
- F. Minimize shutdown times by thorough advanced planning. Have required equipment, materials, and labor on hand at time of shutdown.
- G. Where required to minimize treatment process interruptions while complying with specified sequencing constraints, provide temporary pumping, power, lighting, controls, instrumentation, and safety devices.

1.05 COMPLIANCE WITH AQUIFER PROTECTION PERMIT

- A. The existing facility is operating under the terms of an Aquifer Protection Permit issued by the State of Arizona. This permit specifies the water quality limits that the plant must meet prior to on-site discharge of effluent. A copy of the existing permit is on file for review at the plant's Administration Building.
- B. Perform work in a manner that will not prevent the existing facility from achieving the finished water quality requirements established by regulations.
- C. Bear the cost of penalties imposed on the Owner for discharge violations caused by actions of the Contractor.

1.06 REQUIREMENTS FOR OPERATION OF PLANT AND MAINTAINING CONTINUOUS OPERATION OF EXISTING FACILITIES

- A. Facilities or conditions required to keep the existing plant operational include, but are not limited to, the following:
 - 1. Electrical power including transformers, distribution wiring and motor control centers.
 - 2. Raw (untreated) sewage collection and screening facilities. Existing pipelines are provided for this.
 - 3. Piping for conveyance of raw sewage, partially treated effluent, fully treated effluent, waste and recycled sludges.
 - 4. Chemical storage, metering, conveyance, and control facilities.
 - 5. Aeration treatment basin including process air blowers and internal mixed liquor recycle pumps.
 - 6. Flow split structures.
 - 7. Secondary clarifiers.
 - 8. Recycled and waste activated sludge (RAS/WAS) pump station.
 - 9. Filter facilities.
 - 10. Backwash pumps.
 - 11. Solids handling facilities, including centrifuges, drying beds, and digester.
 - 12. Plant return pump station.
 - 13. Laboratory facilities.
 - 14. Office, toilets and washrooms.
 - 15. Fencing and gates.
 - 16. Lighting.
 - 17. Heating, ventilation and air conditioning.
 - 18. Instrumentation, meters, controls and telemetry equipment.
 - 19. Safety equipment and features.
 - 20. Parking for City employees and vehicles required for operation and maintenance of the facility.
 - 21. Telephone system.
 - 22. Storm drainage.

- B. Conduct the Work and provide temporary facilities required to keep the existing plant continuously operational.

- C. Do not remove or demolish existing facilities required to keep the existing plant operational at the capacities specified until the existing facilities are replaced by temporary, new or upgraded facilities or equipment. The replacement facilities shall have been tested and demonstrated to be operational prior to removing or demolishing existing facilities.

- D. Method of Procedure (MOP):
 - 1. MOP instructions: See Appendix A.
 - 2. Prepare MOP for at least the following activities:
 - a. Injection Well Supply Pump Station tie-in to existing yard piping (both inlet and discharge)
 - b. Yard piping tie-ins for Injection Well No. 1
 - c. Yard piping tie-ins for Injection Well No. 2
 - d. Any electrical work that requires shut down of existing electrical services.
 - 3. Other Work not specifically listed may require MOPs as determined necessary by the Contractor, Owner, or Engineer.

4. Submit Baseline Schedule with proposed MOPs.
5. Submit MOP Log at construction progress meetings.
6. No consideration will be given to claims of additional time and cost associated with preparing MOPs required by the Owner and Engineer to complete this work in a manner that facilitates proper operation of the facility and compliance with effluent discharge criteria.
7. Where required to minimize treatment process interruptions while complying with specified sequencing constraints, provide temporary pumping, power, lighting, controls, instrumentation, and safety devices.

1.07 OPERATIONS AND MAINTENANCE ACCESS

- A. Provide safe, continuous access to process control equipment for plant operations personnel.

1.08 SHUTDOWN CONSTRAINTS

- A. Comply with shutdown constraints described in general terms as follows:
 1. Complete WWRP shutdown will not be allowed. Restrictions for shut down to be determined by Owner. No additional compensation or time will be granted for required shutdowns.
 2. Shut downs of irrigation systems shall be closely coordinated with the Owner to minimize delivered effluent to Reservoir No. 3.

1.09 UTILITIES

- A. Maintain electrical, telephone, water, gas, sanitary facilities, and other utilities within existing facilities in service. Provide temporary utilities when necessary.

1.10 WORK BY OTHERS

- A. Where proper execution of the Work depends upon work by others, inspect and promptly report discrepancies and defects.

1.11 TEMPORARY SERVICES, MATERIALS, AND EQUIPMENT

- A. Locate temporary facilities in a manner that minimizes interference to Owner's operation and maintenance personnel.
- B. Unless otherwise specified, install temporary pipelines of the same size as its connection to the existing facility at the downstream end of the pipeline.
- C. Provide piping of suitable material for the material being conveyed.
- D. Provide submittals on proposed temporary electrical and instrumentation components necessary to maintain existing facilities.
- E. Dewater and promptly clean basins and channels temporarily removed from service.
- F. Dimensions for all existing structures, piping, paving, and other nonstructural items are approximate. The Contractor shall field verify all dimensions and conditions and

report any discrepancies to the Engineer a minimum of 14 days in advance of any construction in the area.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

APPENDIX A
“Method of Procedure” (MOP)
Instructions and Forms

Definition and Purpose

“Method of Procedure” (MOP) is a detailed document submitted by the CONTRACTOR to request process shutdown(s), utility tie-in(s), work in areas that may risk unanticipated outages, or flow diversions to accommodate site construction activities during a project. Such activities may include (but are not limited to) new tie-ins to utilities or structures, mechanical modifications to process piping or equipment, demolition, bulkhead installation, and cleaning processes.

The MOP provides a detailed plan to the OWNER and ENGINEER that describes specific aspects of the work including purpose, time of execution, and anticipated impacts on treatment processes. The MOP also includes contingency measures and provisions for rapid closure in the event that shutdown or work progress difficulties are encountered. Information from relevant trades associated with the requested shutdown, diversion, or tie-in is also included.

The OWNER should use the information within the MOP to define operational procedures and methods to safely and successfully assist the CONTRACTOR.

MOP Process Summary

WHO	STEP	TIMING
Contractor	1. Identify MOPs needed on MOP Log and Baseline Schedule.	7 days prior to Preconstruction Scheduling Meeting
Contractor, Owner, Engineer	2. Pre-MOP Meeting.	More than 28 days prior to work
Contractor	3. Submits MOP.	No later than 28 days prior to work
Owner	4. Reviews MOP.	
Owner	5. MOP finalized.	7 days prior to work
Contractor	6. Complete Readiness Checklist.	5 days prior to work
Contractor	7. Complete Safety Checklist.	Just prior to commencing work
Contractor	8. Complete Work.	
Contractor	9. Update MOP Log	Monthly

MOP Process Detail

STEP 1. Identifies MOPs needed on MOP Log and Baseline Schedule.

CONTRACTOR submit a preliminary list of anticipated project MOPs on MOP Log. MOPs identified but not limited to those shutdowns, diversions, or tie-ins described in the Contract Documents. Incorporate MOPs as tasks in Baseline Schedule. Date scheduled MOPs to coincide with the appropriate construction activities.

STEP 2. Pre-MOP Meeting

CONTRACTOR requests a Pre-MOP Meeting with the OWNER and ENGINEER to discuss the nature of the shutdown, diversion, or tie-in, and to gather the information necessary to complete the MOP Form. The pre-MOP meeting may be waived by the OWNER or ENGINEER if the work is deemed to be minor.

STEP 3. Submits MOP.

CONTRACTOR completes the MOP Form and submit 3 copies for approval to the OWNER's Project Manager (OPM).

STEP 4. Reviews MOP.

OPM distributes MOP Form for review by the OWNER's Construction Coordinator, O&M Representative, and ENGINEER's Project Representative. Review MOP Form for completeness, accuracy, compliance with both the construction schedule, constraints defined in contract documents, and to ensure that the requested work does not negatively impact plant operations or other concurrent project activities. Additional information may be requested to better understand the nature of and method for completing the Work.

STEP 5. MOP finalized.

Once the MOP is agreed to by all parties, the MOP will be finalized by signature. Copies are distributed to the OWNER, ENGINEER and CONTRACTOR.

STEP 6. Complete Readiness Checklist.

CONTRACTOR verifies everything is ready for the work.

STEP 7. Complete Safety Checklist.

CONTRACTOR ensures safety.

STEP 8. Complete work.

CONTRACTOR complete work.

STEP 9. Update MOP Log and Progress Schedules.

CONTRACTOR updates MOP Log weekly and distributes at the regularly scheduled construction progress meetings.



METHOD OF PROCEDURE (MOP) FORM

Owner: _____	Date: _____
Contractor: _____	Carollo Project No. _____
Project Name: _____	Submittal No.: _____
Submittal Title: _____	Spec/Dwg. Reference: _____

MOP #	Task Title (Provide <10 word title):	Submittal Date: (No later than 28 days prior to work)
-------	--------------------------------------	---

SCHEDULE OF WORK ACTIVITY START: (Date/Time)	END: (Date/Time)
--	------------------

REQUESTOR: _____

PRIMARY POINT OF CONTACT:	PHONE/PAGER:
---------------------------	--------------

SECONDARY POINT OF CONTACT:	PHONE/PAGER:
-----------------------------	--------------

NOTIFY <input type="checkbox"/> Control Room, Phone	<input type="checkbox"/> Security, Phone
---	--

BUILDING:	LOCATION OF WORK FLOOR/LEVEL:
-----------	-------------------------------

DESCRIPTION OF WORK: (Provide sufficient details on process isolation, work sequencing, and safety (i.e., control of significant hazards unique to the work) to demonstrate an understanding of the work and how it will be completed within the constraints, and its impact on the processes and facility.)

Task Summary: _____

Processes Affected: _____

Trades Affected: _____

WORK PLAN:

Work Sequencing: _____

Process Isolation: _____

Spill Prevention Plan: _____

Contingency Plans: _____

CRITICAL EQUIPMENT/TOOLS: (pumps and discharge hoses with correct fittings, blind flanges and pipe plugs, no-hub fittings, properly sized electrical service components, generators, portable lighting, chlorine for potable water pipe breaks, etc.)

<input type="checkbox"/>	Acoustic Ceiling/or Walls Access	<input type="checkbox"/>	Excavation Permit	<input type="checkbox"/>	Lock Out/Tag Out
<input type="checkbox"/>	Chemical Use Approval	<input type="checkbox"/>	Fire Sprinkler Impairment	<input type="checkbox"/>	Life Safety Systems
<input type="checkbox"/>	Confined Space Permit	<input type="checkbox"/>	Flammable Materials	<input type="checkbox"/>	Roof Protocol
<input type="checkbox"/>	Critical Lift Plan	<input type="checkbox"/>	Flush / Discharge	<input type="checkbox"/>	Work After Dark
<input type="checkbox"/>	Energized Electrical Work	<input type="checkbox"/>	High Pressure Test	<input type="checkbox"/>	
<input type="checkbox"/>	Elect. Panel Schedules	<input type="checkbox"/>	Hot Work/Open Flame	<input type="checkbox"/>	

EXISTING SERVICE(S) AT RISK:

<input type="checkbox"/>	Breathing Air	<input type="checkbox"/>	Elect Normal	<input type="checkbox"/>	Process Access	<input type="checkbox"/>	Telephones
<input type="checkbox"/>	Chemical Distribution	<input type="checkbox"/>	Fire Protection	<input type="checkbox"/>	Safety Showers	<input type="checkbox"/>	UPS
<input type="checkbox"/>	City Water	<input type="checkbox"/>	HVAC	<input type="checkbox"/>	SCADA	<input type="checkbox"/>	VAX/DATA
<input type="checkbox"/>	Communication	<input type="checkbox"/>	Inert Gas	<input type="checkbox"/>	Security	<input type="checkbox"/>	WW Disinfection
<input type="checkbox"/>	Domestic Drain	<input type="checkbox"/>	Instrument - Air	<input type="checkbox"/>	Solvent Drain	<input type="checkbox"/>	
<input type="checkbox"/>	Elect-Bus Duct	<input type="checkbox"/>	Life Safety System	<input type="checkbox"/>	Specialty Gases	<input type="checkbox"/>	
<input type="checkbox"/>	Elect Emergency	<input type="checkbox"/>	Natural Gas	<input type="checkbox"/>	Storm Drain	<input type="checkbox"/>	

REVIEWER'S INSTRUCTIONS / COMMENTS: _____

PREJOB BRIEFING MUST BE COMPLETED PRIOR TO COMMENCING WORK:

	Full Name (printed)	Signature	Phone	Date
Submitted By				
System Owner				
Reviewer (if needed)				
Reviewer (if needed)				
Reviewer (if needed)				
Reviewer (if needed)				

READINESS CHECKLIST
(5 days prior to work)

Checklist provided as a guide but is not all inclusive.

Confirm all parts and materials are on site: _____

Review work plan: _____

Review contingency plan: _____

SAFETY CHECKLIST
(Just prior to commencing work)

Checklist provided as a guide but is not all inclusive.

Location awareness:

Emergency exits: _____

Emergency shower and eyewash: _____

Telephones and phone numbers: _____

Shut-off valve: _____

Electrical disconnects: _____

Inspect work area:

Take time to survey the area you are working in. Ensure that what you want to do will work.

Do you have enough clearance? Is your footing secure? Do you have adequate lighting and ventilation? Are surrounding utilities out of the way for you to perform your work?

MSDS (Material Safety Data Sheets)

Understand the chemicals and substances in the area you are working in by reading the MSDS.

Lockout/Tagout Procedure:

Lockout/Tagout energy sources before beginning work.

Make sure all valves associated with the work are locked out and tagged out on each side of the penetration.

Make sure the lines are depressurized.

Overhead work:

Use appropriate personal protective equipment; i.e. safety harness, lifeline, etc.

Select appropriate tie-off points; i.e. structurally adequate, not a pipe or conduit, etc.

Spotter assigned and in position.

Pipe rack access; i.e. check design capacity, protective decking or scaffolding in place, exposed valves or electrical switches identified and protected.

Safety equipment:

Shepherd's hook

ARC flash protection

Fire extinguisher

Other _____

Accidents:

Should accidents occur do not shut-off and do not attempt to correct the situation, unless you are absolutely positive that your action will correct the problem and not adversely affect other people or equipment.

Review start-up documents:

In the event the system is shutdown, the Control Center should have a working knowledge of the start-up procedures in order to deal effectively with unforeseen events.

Evacuation procedures:

Do not obstruct evacuation routes.

Take time to survey the area for evacuation routes.

SECTION 01201
PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. This Section is supplementary to the Owner's General Conditions. In the event of a conflict, the General Conditions shall take priority.
- B. Section includes: Procedures for submitting applications for payment and means used as a basis for Progress Payments, including:
 - 1. Cost Summaries.
 - 2. Payment for Mobilization.
 - 3. Start-Up.
 - 4. Demobilization.
- C. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01270 - Unit Prices
 - b. Section 01292 - Schedule of Values.

1.02 REFERENCES

- A. Occupational Safety and Health Administration (OSHA).

1.03 BASIS FOR PROGRESS PAYMENTS

- A. Base Application for Payment on the breakdown of costs for each scheduled activity in the Progress Schedule and the Percentage of Completion for each activity. Generate Application for Payment by downloading cost data from the Progress Schedule to a spreadsheet type format. Identify each activity on the Progress Schedule that has a cost associated with it, the cost of each activity, the estimated Percent Complete for each activity, and the Value of Work Completed for both the payment period and job to date.

1.04 PAYMENT REQUESTS

- A. Prepare progress payment requests on a monthly basis. Base requests on the breakdowns of costs for each scheduled activity and the percentage of completion for each activity.

- B. Indicate total dollar amount of work planned for every month of the project. Equate sum of monthly amounts to Lump Sum Contract Price.
- C. Generate Progress Payment request forms by downloading cost data from the schedule information to a spreadsheet type format. Identify each activity on the Progress Schedule that has a cost associated with it, the cost for each activity, the estimated percent complete for each activity, and the value of work completed for both the payment period and job to date.
- D. Prepare summary of cost information for each Major Item of Work listed in the Schedule of Values. Identify the value of work completed for both the payment period and job to date.
- E. Submit progress payment requests at progress meetings.

1.05 COST SUMMARIES

- A. Prepare Summary of Cost Information for each Major Item of Work listed in the Schedule of Values. Identify the Value of Work Completed for both the payment period and job to date.
- B. Cash flow summary: Prepare cash flow summary, indicating total dollar amount of work planned for each month of the project. Equate sum of monthly amounts to Lump Sum contract price.

1.06 PAYMENT FOR MOBILIZATION

- A. Limit amounts included under mobilization to the following items:
 - 1. Moving on the site any equipment required for first month operations.
 - 2. Installing temporary construction power, wiring, and lighting facilities.
 - 3. Establishing fire protection plan and safety program.
 - 4. Developing construction water supply.
 - 5. Providing field office trailers for the Contractor, complete with all specified furnishings and utility services including telephones.
 - 6. Providing on-site sanitary facilities and potable water facilities as specified.
 - 7. Arranging for and erection of Contractor's work and storage yard, employee parking facilities, and entrance road.
 - 8. Submit all required insurance certificates and bonds.
 - 9. Obtaining all required permits, licenses, and fees.
 - 10. Developing construction schedule.
 - 11. Submit preliminary schedule of values of the Work.
 - 12. Provide and erect the project sign (if required).
 - 13. Post all OSHA, (state agency), Department of Labor, and all other required notices.
 - 14. Limits of construction and clearing have been located and flagged.
 - 15. Have Contractor's project manager and/or general superintendent on job site full-time.
 - 16. The Engineer is satisfied that responsive and responsible progress on the Contract Work is under way.
- B. Furnish data and documentation to substantiate the amounts claimed under mobilization.

- C. Limit price for mobilization to no more than 10 percent of Contract Price.
- D. No payment for mobilization, or any part thereof, will be recommended until all mobilization items listed above have been completed.

1.07 PAYMENT FOR START-UP AND DEMOBILIZATION

- A. Total Price for start-up and demobilization shall be in accordance with the General Conditions, or if not stated in the General Conditions, shall not exceed one-half percent (0.5%) of Contract Price.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01210

ALLOWANCES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Listing of allowance items:
 - a. Related responsibilities of Engineer and Contractor, and procedures.
- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 17050 - Common Work Results For Process Control And Instrumentation Systems.
 - b. Section 17761 - PLC Programming Software
 - c. Section 17762 - SCADA Systems Programming Software

1.02 ALLOWANCE AMOUNTS

- A. Include following amounts in Contract Price:
 - 1. \$5,000 for additional programming above and beyond any programming required by the contract documents.
 - a. Allowance shall be used ONLY upon request from, and approval by, the OWNER after demonstrating that programming is outside the scope of the contract documents.
 - b. CONTRACTOR shall submit proposal for additional programming for review and approval by the OWNER prior to commencing work.
 - c. Programming shall be billed at hourly rate listed in the unit prices (see Specification 01292).

1.03 COSTS INCLUDED AND EXCLUDED IN ALLOWANCES

- A. Costs included in allowances for furnishing products only:
 - 1. Net cost of product.
 - 2. Delivery and unloading at site.
 - 3. Applicable taxes.
- B. Costs included in Contract Price, but not included in allowances for furnishing products only:
 - 1. Handling at site, including uncrating and storage.
 - 2. Protection from elements, theft, and damage.

3. Labor, installation, testing, and finishing.
 4. Other expenses required to complete installation.
 5. Overhead and profit.
- C. Costs included in allowances for furnishing and installing products:
1. Net cost of product.
 2. Delivery and unloading at site.
 3. Applicable taxes.
 4. Handling at site, including uncrating and storage.
 5. Protection from elements and from damage.
 6. Labor, installation, testing, and finishing.
 7. Other expenses required to complete installation.

1.04 DUTIES OF CONTRACTOR IN PROVIDING PRODUCTS BY ALLOWANCE

- A. Advise Engineer at least 60 days in advance of purchase date necessary to avoid impacts to Progress Schedule.
- B. Obtain proposals from suppliers, including:
1. Quantity.
 2. Complete description of product and services provided under allowance.
 3. Unit cost.
 4. Total amount of purchase.
 5. Taxes and delivery charges.
- C. On notification of selection, enter into purchase agreement with designated supplier.
- D. Arrange for delivery and unloading.
- E. Install products in accordance with Contract Documents.

1.05 ADJUSTMENT OF COSTS

- A. When actual cost is more or less than amount of allowance, Contract Price will be adjusted by Change Order.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01230

ALTERNATES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Identification and description of Additive and Standard Bid Alternates.
- B. Related section:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the CONTRACTOR to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 02050 - Earthwork.
 - b. Section 02238 - Rock Removal.
 - c. Section 02318 - Trenching.
 - d. Section 02821 - Fencing
 - e. Section 03300 - Cast in Place Concrete.
 - f. Sections in Division 4 - Masonry.
 - g. Section 15052 - Common Work Results for General Piping.
 - h. Section 15244 - PVC Piping - AWWA C900/C905.
 - i. Section 16920 - Precast Concrete Walk-in Electrical Enclosures.

1.02 PROCEDURES

- A. Alternates will be exercised at time of bid award.
- B. Coordinate related work and modify surrounding work as required to complete the Work, including changes under Alternates accepted by OWNER in Notice of Award.

1.03 ALTERNATES

- A. Additive Bid Alternate A –Injection Well No. 1 Dedicated Supply Line:
 - 1. Base Bid: Do not install Injection Well No. 1 dedicated supply line, and related piping/equipment identified as part of Bid Alternate A.
 - 2. Alternate: Install Injection Well No. 1 dedicated supply line, and related piping/equipment indicated on the plans to be included in Bid Alternate A.
- B. Bid Alternate B - Injection Well No. 1 & No. 2 Site Electrical Buildings:
 - 1. Base Bid: Construct CMU electrical buildings at Well Site No. 1 & No. 2 as shown on plans.
 - 2. Alternate: Provide precast concrete walk-in electrical enclosure per Specification 16920. CONTRACTOR to construct foundation as shown on

plans for CMU building, with modifications as required to suit prefabricated structure. CONTRACTOR to bear cost and schedule impacts of ANY alterations required for pre-fabricated structure. CONTRACTOR shall be responsible to coordinate with all disciplines to ensure that all design requirements are met.

- C. Bid Alternate C - Ornamental Steel Picket Fence and Gates for Well Site No. 1
 - 1. Base Bid: Install chain link fence per plans and specifications
 - 2. Alternate: Install steel picket fence and gates per Specification 02821 in place of chain link.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01292

SCHEDULE OF VALUES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Requirements for preparation, format, and submittal of Schedule of Values.
- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.

1.02 PREPARATION

- A. Prepare Schedule of Values identifying costs of Major Items of Work and other costs shown in sample included at end of this Section.
- B. Divide the work into major items of work as shown in Part 1.04 A:
- C. Assign prices to Major Items of Work which aggregate the Contract Price. Base prices on costs associated with scheduled activities based on the Project Schedule for each Major Item of Work. The assigned prices shall include all cost including but not limited to material, labor, taxes and fees.
- D. Unit Prices: Provide unit prices for the following items as specified for the project, which shall be valid for the duration of the Project. Unit prices shall include all material, labor, equipment, and other fees/taxes for fully installed system (for piping, this includes trenching, backfill, etc assuming 3 ft cover). Unit prices shall be valid for up to the following approximate quantities of each material:
 - 1. Piping: 1,000 lf
 - 2. Asphalt Pavement: 1,000 sf
 - 3. Duct bank: 1,000 lf
 - 4. Rock Excavation: 5,000 CY

Item	Unit	Unit Price (\$)
3-inch schedule 80 PVC PIPE, SW joints,	Lineal foot (lf)	
6-inch C900 PVC PIPE, DR 18, restrained joint	lf	
6-inch C900 PVC PIPE, DR 18, push on joint	lf	
6-inch CL53 cement mortar lined ductile iron pipe (DIP), mechanical restrained joint, poly-wrapped	lf	
6-inch CL53 cement mortar lined ductile iron pipe (DIP), unrestrained push on joint, poly-wrapped	lf	
ABC access road per Keynote 3 on Sheet 10-C-01	square foot (sf)	

Item	Unit	Unit Price (\$)
Concrete encased duct bank per Typical Details	lf	
Rock excavation	cubic yard (cy)	
PLC Programming	Hour	

1.03 SUBMITTALS

- A. Submit preliminary schedule of values at Preconstruction Meeting.
- B. Submit corrected schedule of values within 10 days upon receipt of reviewed Schedule of Values, but no later than 10 days prior to anticipated submittal of first Application for Payment.
- C. Upon request, support prices with data which will substantiate their correctness.
- D. If activities are added or removed from the Progress Schedule revise the Schedule of Values and resubmit.
- E. Submit unit prices with Schedule of Values submittal.

1.04 SAMPLE SCHEDULE OF VALUES

- A. Use the following form for Schedule of Values:

Item	Lump Sum Cost
Mobilization	
Potholing	
Locate Underground Utilities	
Excavation	
Backfill	
Grading	
Dewatering	
Yard Piping	
Yard Electrical	
Pump Station Structural	
Pump Station Mechanical	
Pump Station Electrical	
Pump Station Instrumentation & Control	
Pump Station Programming	
Cartridge Filter Structural	
Cartridge Filter Mechanical	
Sodium Hypochlorite/Elec Bldg Structural	
Sodium Hypochlorite/Elec Bldg Mechanical	
Sodium Hypochlorite/Elec Bldg Electrical	

Item	Lump Sum Cost
Sodium Hypochlorite/Elec Bldg Instrumentation & Control	
Sodium Hypochlorite/Elec Bldg Programming	
Well Site No. 1 Site Fence & Gates	
Well Site No. 1 Structural	
Well Site No. 1 Mechanical	
Well Site No. 1 Electrical	
Well Site No. 1 Instrumentation & Control	
Well Site No. 1 Programming	
Well Site No. 2 Site Fence & Gates	
Well Site No. 2 Structural	
Well Site No. 2 Mechanical	
Well Site No. 2 Electrical	
Well Site No. 2 Instrumentation & Control	
Well Site No. 2 Programming	
Start-Up and Testing	
Storm Water Pollution Prevention Plan	
Demobilization	
Other	
Total Lump Sum for Project	

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01312

PROJECT MEETINGS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Requirements for conducting conferences and meetings for the purposes of addressing issues related to the Work, reviewing and coordinating progress of the Work and other matters of common interest, and includes the following:
 - 1. Qualifications of Meeting Participants.
 - 2. Preconstruction Conference Progress Meetings.
 - 3. Progress Meetings
 - 4. Pre-installation Meetings.
 - 5. Post Construction Meeting.
 - 6. Electrical and Instrumentation Meetings.
- B. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.

1.02 QUALIFICATIONS OF MEETING PARTICIPANTS

- A. Representatives of entities participating in meetings shall be qualified and authorized to act on behalf of entity each represents, with the exception of the City. The City's inspector/project manager is not authorized to approve or accept any portion of the Work or to issue instructions contrary to the Contract Documents. Approvals, acceptance or instructions, when given, must be in writing and signed by authorized City representatives.

1.03 PRECONSTRUCTION CONFERENCE

- A. Upon issuance of Notice to Proceed, or earlier when mutually agreeable, Owner will arrange preconstruction conference in convenient place for most persons invited, in accordance with the General Conditions.
- B. Invitees to Preconstruction Conference: Contractor's superintendent, Owner, Engineer, representatives of utilities, major subcontractors and others involved in performance of the Work, and others necessary to agenda.
- C. Owner will preside at conference.
- D. Purpose of conference: To establish working understanding between parties and to discuss Construction Schedule, shop drawing and other submittals, cost breakdown of major lump sum items, processing of submittals and applications for payment, and other subjects pertinent to execution of the Work.
- E. Agenda will include:
 - 1. Adequacy of distribution of Contract Documents.

2. Distribution and discussion of list of major subcontractors and suppliers.
 3. Proposed progress schedules and critical construction sequencing.
 4. Major equipment deliveries and priorities.
 5. Project coordination.
 6. Designation of responsible personnel.
 7. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payment.
 - f. Record Documents.
 8. Use of premises:
 - a. Office, construction, and storage areas.
 - b. Owner's requirements.
 9. Construction facilities, controls, and construction aids.
 10. Temporary utilities.
 11. Safety and first aid procedures.
 12. Security procedures.
 13. Housekeeping procedures.
- F. Owner will record minutes of meeting and distribute copies of minutes within 7 days of meeting to participants and interested parties. Contractor may submit written comments to the meeting minutes within 7 days of receipt of draft meeting minutes, to be incorporated in final version of meeting minutes. The final version of the meeting minutes shall be issued within 21 days of the Pre-Construction meeting.

1.04 PROGRESS MEETINGS

- A. Progress meetings are to be held at least once every week in mutually agreed upon place.
- B. Require attendance of Contractor's superintendent and subcontractors who are or are proximate to be actively involved in the Work, or who are necessary to agenda.
- C. Complete and bring Application for Payment and Progress Schedule to progress meeting.
- D. Owner to prepare and distribute agenda.
- E. Owner to preside at meetings.
- F. Purpose of progress meetings: To expedite work of subcontractors or other organizations that are not meeting scheduled progress, resolve conflicts, coordinate and expedite execution of the Work, and review anticipated work for next month at minimum.
- G. Review progress of the Work, Progress Schedule, narrative report, MOPs, Application for Payment, record documents, and additional items of current interest that are pertinent to execution of the Work.

- H. Verify:
 - 1. Actual start and finish dates of completed activities since last progress meeting.
 - 2. Durations and progress of activities not completed.
 - 3. Reason, time, and cost data for Change Order Work that will be incorporated into Progress Schedule and application for payment.
 - 4. Percentage completion of items on Application for Payment.
 - 5. Reasons for required revisions to Progress Schedule and their effect on Contract Time and Contract Price.
 - 6. Review contract approved completion time and number of days requested in written claims.
- I. Discuss potential problems which may impede scheduled progress and corrective measures.
- J. Owner will record minutes of meeting and distribute copies of minutes within 7 days of meeting to participants and interested parties.

1.05 PRE-INSTALLATION MEETINGS

- A. When required in individual specification sections or requested by Engineer, convene pre-installation meeting at Project site before commencing work of specific section.
- B. Require attendance of parties directly affecting, or affected by, Work of specific section.
- C. Notify Engineer 7 calendar days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Contractor will record minutes and distribute electronic copies within 7 calendar days after meeting to participants, with copies to Engineer, Owner, and those affected by decisions made.

1.06 POST CONSTRUCTION MEETING

- A. Meet with and inspect the Work 23 months after date of Substantial Completion with Owner and Engineer.
- B. Arrange meeting at least 21 calendar days before meeting.
- C. Meet in Owner's office or other mutually agreed upon place.
- D. Inspect the Work and draft list of items to be completed or corrected. Owner may present information and request items to be completed or corrected at any time during or within 2 months of the warranty period end.
- E. Review service and maintenance contracts, and take appropriate corrective action when necessary.

- F. Complete or correct defective work and extend correction period accordingly.
- G. Require attendance of Superintendent, appropriate manufacturers and installers of major units of constructions, and affected subcontractors.

1.07 ELECTRICAL AND INSTRUMENTATION COORDINATION MEETINGS

- A. Electrical Meetings:
 - 1. Pre-submittal review meeting as specified in Section 16050.
 - 2. Electrical System Study Meetings as specified in Section 16305.
 - 3. Other meetings as required and as otherwise specified.
- B. Instrumentation and Control Meetings:
 - 1. Pre-Submittal Conference as specified in Section 17050.
 - 2. System Configuration Meetings as specified in Section 17050.
 - 3. Other meetings as required and as otherwise specified.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01329

SAFETY PLAN

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Development and maintenance of a Construction Safety Plan.
- B. The Work is being conducted on the site of a Wastewater Reclamation Plant, and adjacent to public wetlands.

1.02 REFERENCES

- A. OSHA.

1.03 CONSTRUCTION SAFETY PLAN

- A. Detail the methods and procedures to comply with federal, and local health and safety laws, rules and requirements for the duration of the Contract Times. Include the following:
 - 1. Identification of the certified or licensed safety consultant who will prepare, initiate, maintain and supervise safety programs, and procedures.
 - 2. Procedures for providing workers with an awareness of safety and health hazards expected to be encountered in the course of construction.
 - 3. Safety equipment appropriate to the safety and health hazards expected to be encountered during construction. Include warning devices, barricades, safety equipment in public right-of-way and protected areas, and safety equipment used in multi-level structures.
 - 4. Methods for minimizing employees' exposure to safety and health hazards expected during construction.
 - 5. Procedures for reporting safety or health hazards.
 - 6. Procedures to follow to correct a recognized safety and health hazard.
 - 7. Procedures for investigation of accidents, injuries, illnesses and unusual events that have occurred at the construction site.
 - 8. Periodic and scheduled inspections of general work areas and specific workstations.
 - 9. Training for employees and workers at the jobsite.
 - 10. Methods of communication of safe working conditions, work practices and required personal protection equipment.
- B. Assume responsibility for every aspect of health and safety on the jobsite, including the health and safety of subcontractors, suppliers, and other persons on the jobsite:
 - 1. Forward available information and reports to the Safety Consultant who shall make the necessary recommendations concerning worker health and safety at the jobsite.
 - 2. Employ additional health and safety measures specified by the Safety Consultant, as necessary, for workers in accordance with OSHA guidelines.

- C. Transmit to OWNER and ENGINEER copies of reports and other documents related to accidents or injuries encountered during construction.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. This Section is supplementary to the General Conditions of this contract, Item No. 25. Section Includes: Requirements and procedures for submitting Shop Drawings, Product Data, Samples, other submittals relating to products, and as specified in individual Sections.

1.02 DEFINITIONS

- A. Manufacturer's Instructions: Instructions, stipulations, directions, and recommendations issued in printed form by the manufacturer of a product addressing handling, installation, erection, and application of the product; Manufacturers Instructions are not prepared especially for the Work.
- B. Shop Drawings: Drawings, diagrams, schedules, and other data specially prepared for the Work to illustrate some portion of the Work.
- C. Product Data: Illustrations, standard schedules, performance charts, brochures, diagrams and other information to illustrate materials or equipment for some portion of the Work.
- D. Samples: Physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.
- E. Special Samples: Physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged, and will be incorporated in the Work.

1.03 PROCEDURES

- A. Deliver submittals to City Engineer at address listed on cover of Project Manual, unless another mutually agreeable place is designated.
- B. Submit submittals in ample time for each to serve submittals' intended purpose.
- C. Submit submittals which are specified or reasonably required for construction, operation, and maintenance of the Work.
- D. Deliver submittals under acceptable transmittal form which identifies:
 - 1. Submittal date.
 - 2. Project and Contractor.
 - 3. Subcontractor and major supplier, when appropriate.
 - 4. Reference submittal to Contract Documents by Drawing, detail, and/or Specification Section numbers, as appropriate.

5. Statement from Contractor that he has reviewed the submittal and it meets the specification requirements to the best of his knowledge.
 6. Variations from Contract Documents when variations are included in submittal.
- E. Submit specified number of copies of submittal. Electronic submittals may be acceptable upon approval from Owner.
- F. Provide or furnish products and execute the Work in accordance with accepted submittals, unless in conflict with Contract Documents.
- G. When minor deviations from Contract Documents are accepted, modify Contract Documents in accordance with the Conditions of the Contract.

1.04 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. Submit Shop Drawings, Product Data, Samples, and other pertinent information in sufficient detail to show compliance with specified requirements.
- B. Check, verify, and revise submittals as necessary to bring them into conformance with Contract Documents and actual field conditions.
1. Determine and verify quantities, dimensions, specified design and performance criteria, materials, catalog numbers, and similar data.
 2. Coordinate submittal with other submittals and with the requirements of the Contract Documents.
- C. After completion of checking, verification, and revising; stamp, sign and date submittals indicating review and approval; and submit to Engineer.
1. Stamp and signature indicates Contractor has satisfied shop drawing review responsibilities and constitutes Contractor's written approval of shop drawing.
 2. Shop drawings without Contractor's written approval will be returned for resubmission.
- D. Shop Drawings: Submit five copies. Two will be returned with reviewer's comments and stamp.
- E. Product Data and Manufacturer's Instructions: Submit 5 copies. Excise or cross out non-applicable information and clearly mark applicable information with citations to and terminology consistent with Contract Documents.
1. Two copies will be returned with reviewer's comments and stamp.
- F. Samples: Submit 2 samples labeled with reference to applicable Contract Documents. Label will be returned with reviewer's selection when appropriate, comments and stamp. Samples will not be returned unless return is requested in writing and additional sample is submitted.
- G. Special Samples: Submit 1 sample labeled with reference to applicable Contract Documents. Sample and 1 label will be returned for installation in the Work.
- H. Assume risk of expense and delays when proceeding with work related to required submittals without review and acceptance.

1.05 MANUFACTURER'S INSTRUCTIONS

- A. Submit manufacturer's instructions whenever made available by manufacturers and when installation, erection, or application in accordance with manufacturer's instructions are required by the Specifications.
- B. Submit manufacturer's instructions prior to installation, erection, or application of equipment and other project components. Submit manufacturer's instructions in accordance with requirements for Product Data.

1.06 ENGINEER'S REVIEW

- A. Engineer's review of submittals shall not release Contractor from Contractor's responsibility for performance of requirements of Contract Documents. Neither shall Engineer's review release Contractor from fulfilling purpose of installation nor from Contractor's liability to replace defective work.
- B. Do not consider submittals as Contract Documents. Purpose of submittals is to demonstrate how Contractor intends to conform with the design concepts.
- C. Engineer's review of shop drawings, samples, or test procedures will be only for conformance with design concepts and for compliance with information given in Contract Documents.
 - 1. Engineer's review does not extend to:
 - a. Accuracy of dimensions, quantities, or performance of equipment and systems designed by Contractor.
 - b. Contractor's means, methods, techniques, sequences, or procedures except when specified, indicated on the Drawings, or required by Contract Documents.
 - c. Safety precautions or programs related to safety which shall remain the sole responsibility of the Contractor.
- D. Except as may be provided in subsequent specifications or the General Conditions, a submittal will be returned within 30 days. When a submittal cannot be returned within that period, Engineer will, within a reasonable time after receipt of the submittal, give notice of the date by which that submittal will be returned.
- E. For submittals returned Resubmittal Not Required - Make Corrections Noted / See all Comments, Contractor shall incorporate all review comments into the work, but resubmittal of an amended submittal package is not required.
- F. For submittals returned Correct and Resubmit – Make Corrections Noted / See All Comments, Contractor shall incorporate the review comments into a complete revised package, and resubmit it for review.
- G. For submittals returned Rejected- See All Comments, Contractor shall develop a new submittal package with materials, equipment, methods, etc., that meet the requirements of the Contract Documents.
- H. For submittals returned Submittal Not Reviewed, Filed for Record, no further action is required by the Contractor for this submittal.

- I. Engineer will be entitled to rely upon the accuracy or completeness of designs, calculations, or certifications made by licensed professionals accompanying a particular submittal whether or not a stamp or seal is required by Contract Documents or Laws and Regulations.
- J. Costs incurred by Owner as a result of additional reviews of a particular submittal after the second time it has been reviewed shall be borne by Contractor. Reimbursement to Owner will be made by deducting such costs from Contractor's subsequent partial payments.

1.07 MINOR OR INCIDENTAL PRODUCTS AND EQUIPMENT SCHEDULES

- A. Shop Drawings of minor or incidental fabricated products will not be required, unless requested.
- B. Submit tabulated lists of minor or incidental products showing the names of the manufacturers and catalog numbers, with Product Data and Samples as required to determine acceptability.

1.08 SUBMITTALS FOR INFORMATION OR RECORD ONLY

- A. Submit 3 copies of each. None will be returned.
- B. Mill Test Reports:
 - 1. Submit 4 certified copies of factory and mill test reports for record only. No copies will be returned.
 - 2. Do not incorporate Products in the Work which have not passed testing and inspection satisfactorily.
 - 3. Pay for mill and factory tests.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01350

SPECIAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Special procedures for locating and verifying concealed existing facilities.

1.02 CONCEALED EXISTING FACILITIES

- A. Verify locations of utilities and facilities which may exist by consulting with the Owner, utility companies, and Blue Stake or other service available in area of Project:
 - 1. Abide by easement and right-of-way restrictions.
- B. Notify the Owner, owners of facilities when the Work will be in progress. Make arrangements for potential emergency repairs in accordance with requirements of owners of utility facilities, including individual or residential facilities.
- C. Assume responsibility for repair of facilities damaged by performance of the Work.
- D. Expose sanitary and storm sewers, spray irrigation lines, gravity wetlands feed lines, water, gas, electric, telephone utility lines, and other underground facilities indicated to permit survey location prior to commencement of Work in affected area:
 - 1. Expose in ample time to permit relocation of interfering utilities with minimum delaying effect on Contract Time.
- E. Work required for raising, lowering, or relocating utilities not indicated will be performed by affected utility owners or as part of the Work at option of affected owners of utilities:
 - 1. When part of the Work, perform work in accordance with standards of affected utility owner, and adjustment to Contract Price and Contract Times will be made as stipulated in conditions of Contract.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01352

ALTERATION PROJECT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Requirements and procedures for performing alterations to existing facilities.
- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01140 - Work Restrictions.
 - b. Section 01500 - Temporary Facilities and Controls.
 - c. Section 01732 - Cutting and Patching.
 - d. Section 01770 - Closeout Procedures.
 - e. Section 02222 - Building Demolition.

1.02 SUBMITTALS

- A. Alterations schedule: Submit in accordance with requirements for Progress Schedules.

1.03 SEQUENCE AND SCHEDULES

- A. Perform Work in sequences and within times specified in Section 01140.
- B. Submit separate detailed sub-schedule for alterations, coordinated with construction schedules. Indicate:
 - 1. Each stage of Work and dates of occupancy of areas.
 - 2. Date of Substantial Completion for each area of alterations as appropriate.
 - 3. Trades and Subcontractors employed in each stage.

1.04 WORK INVOLVED WITH EXISTING OPERATING FACILITIES

- A. Perform the Work while existing facility is in operation.
- B. Do not jeopardize operation or materially reduce efficiency of existing facility.
- C. Coordinate the Work with operation of the facility:
 - 1. Do not begin alterations of designated portions of the Work until specific permission has been granted in writing by Owner in each case.

2. Engineer will coordinate the planned procedure with facility manager.
 3. Complete as quickly as possible and with as little delay as possible, connections to existing equipment and utilities, and other operations that interfere with the operation of existing facility.
- D. Operational functions of the facility that are required to be performed to facilitate the Work will be performed by facility personnel only.
- E. Plant Superintendent will cooperate in every way practicable to assist in expediting the Work.
- F. When necessary for the proper operation or maintenance of portions of the facility, reschedule Work operations so that the Work will not conflict with necessary operations or maintenance of the facility.

1.05 ALTERATIONS, CUTTING, AND PROTECTION

- A. Assign relocation, removal, cutting, and patching to trades qualified to perform in manner which causes least damage and provide means of returning surfaces to appearance of new construction.
- B. Provide weather protection, waterproofing, heat and humidity control as needed to prevent damage to remaining existing and new construction.
- C. Provide temporary enclosures as specified in Section 01500 to separate construction areas from existing building and from areas occupied by Owner, and to provide weather protection.

1.06 SALVAGE MATERIALS

- A. Salvage materials: Materials removed from existing facility.
- B. Materials designated for salvage:
1. None
- C. Handling and storage:
1. Prevent damage to salvaged materials during removal, handling, and transportation of salvaged materials.
 2. Prepare salvaged materials for storage:
 - a. NA
 3. Store salvaged materials in the following locations:
 - a. On-site location selected by Owner.
- D. Pay costs associated with salvaging materials, including handling, transporting, and storage.

1.07 PREPARATION

- A. Identify existing materials which shall be patched, extended, or matched.
- B. In addition to demolition specified in Section 02222, and construction specifically indicated on the Drawings, cut, move or remove items as necessary to provide access or to allow alteration and new construction to proceed, including:

1. Repair or removal of hazardous or unsanitary conditions.
 2. Removal of abandoned items and items serving no useful purpose, such as abandoned piping, conduit, and wiring.
 3. Removal of unsuitable or extraneous materials not marked for salvage, such as abandoned furnishings and equipment, and debris such as rotted wood, rusted metals, and deteriorated concrete.
 4. Cleaning of surfaces and removal of surface finishes needed to install new construction and finishes.
 5. Disposal of items removed and not salvaged.
- C. Cut and remove minimum amount of existing construction in manner which avoids damage to adjacent work.
- D. Cut finish surfaces such as masonry, tile, plaster, and metals by methods which terminate surfaces in straight line at natural points of division.
- E. Perform cutting and patching as specified in Section 01732.

1.08 TRANSITION FROM EXISTING TO NEW WORK

- A. When new construction abuts or finishes flush with existing construction, make smooth transitions and match architecture of existing construction.
- B. Where partitions are removed, patch floors, walls, and ceilings with finish materials which match existing materials.
- C. Where removal of partitions results in adjacent spaces becoming one, rework floors, walls, and ceilings to provide smooth planes without breaks, steps, or bulkheads.
- D. Where changes of plane exceed 2 inches, request instructions for making transition.
- E. Trim and refinish existing doors as necessary to clear new floors.
- F. Match patched construction with adjacent construction in texture and appearance so that patch or transition is invisible at 5-foot distance.
- G. When finished surfaces are cut so that smooth transition is impossible, terminate existing surface in neat manner along straight line at natural line of division and provide appropriate trim.

1.09 DAMAGED SURFACES

- A. Patch and replace portions of existing finished surfaces which are damaged, lifted and discolored with matching material.
- B. Provide adequate support of substrate prior to patching finishes.
- C. Refinish patched portion of painted or coated surfaces in manner which produces uniform color and texture to entire surface.
- D. When existing surface finish cannot be matched, refinish entire surface to nearest change of plane exceeding 45 degrees.

1.10 CLEANING

- A. Perform periodic and final cleaning as specified in Sections 01500 and 01770.
- B. Clean Owner-occupied areas daily.
- C. Clean spillage, overspray and heavy collection of dust in Owner-occupied areas immediately.
- D. At completion of each portion of Work, clean area and make surfaces ready for successive portions of Work.
- E. At completion of alterations in each area, provide final cleaning and return space to condition suitable for use by Owner.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01354

HAZARDOUS MATERIAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. This Section is supplemental to the Owner's General Conditions Section 22, Cleanup Practices
- B. Section includes: Procedures required when encountering hazardous materials at the Work site.

1.02 REFERENCES

- A. American Conference of Government Industrial Hygienists (ACGHI).
- B. American National Standards Institute (ANSI).
- C. National Institute for Occupational Safety and Health (NIOSH).
- D. Occupational Safety and Health Administration (OSHA).
- E. Society for Protective Coatings (SPCC):
 - 1. Guide 6 - Guide for Containing Debris Generated During Paint Removal Operations.
 - 2. Guide 7 - Guide for the Disposal of Lead-Contamination Surface Preparation Debris.
 - 3. PA Guide 3 - A Guide to Safety in Paint Application.
- F. United States Environmental Protection Agency (EPA).
- G. United States Code of Federal Regulation (CFR):
 - 1. Title 29 - Labor.
 - 2. Title 40 - Protection of Environment.
 - 3. 1910 Occupational Safety and Health Administration.

1.03 SUBMITTALS

- A. Submit laboratory reports, hazardous material removal plans, and certifications.

1.04 OPERATING DIGESTERS

- A. Observe safety precautions in vicinity of operating digesters which contain digester gases, including methane, hydrogen sulfide, and carbon dioxide.

1.05 HAZARDOUS MATERIALS PROCEDURES

- A. Hazardous materials are those defined by Arizona Revised Statute, Title 49, Chapter 5.

- B. When hazardous materials have been found:
 - 1. Prepare and initiate implementation of plan of action.
 - 2. Notify immediately Owner, Engineer, and other affected persons.
 - 3. Notify such agencies as are required to be notified by Laws and Regulations with the times stipulated by such Laws and Regulations.
 - 4. Designate a Certified Industrial Hygienist to issue pertinent instructions and recommendations for protection of workers and other affected persons' health and safety.
 - 5. Identify and contact subcontractors and licensed personnel qualified to undertake storage, removal, transportation, disposal, and other remedial work required by, and in accordance with, laws and regulations.
- C. Forward to Engineer, copies of reports, permits, receipts, and other documentation related to remedial work.
- D. Assume responsibility for worker health and safety, including health and safety of subcontractors and their workers.
 - 1. Instruct workers on recognition and reporting of materials that may be hazardous.
- E. File requests for adjustments to Contract Times and Contract Price due to the finding of Hazardous Materials in the Work site in accordance with Contract Documents.
 - 1. Minimize delays by continuing performance of the Work in areas not affected by hazardous materials operations.

1.06 ASBESTOS MATERIALS

- A. It is the specific intent of these Contract Documents to exclude from the Work any and all products or materials containing asbestos. No products containing asbestos shall be incorporated in the Work.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01410
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Regulatory requirements:
 - 1. Building code.
 - 2. Electrical code.
 - 3. Energy code.
 - 4. Fire code.
 - 5. Mechanical code.
 - 6. Plumbing code.

1.02 REFERENCES

- A. International Code Council (ICC):
 - 1. International Building Code (IBC), 2006.
 - 2. International Fire Code (IFC), 2003.
 - 3. International Mechanical Code (IMC), 2006.
 - 4. International Plumbing Code (IPC), 2006.
- B. National Fire Protection Association (NFPA):
 - 1. NFPA 70: National Electrical Code, 2005.

1.03 SYSTEM DESCRIPTION

- A. Design requirements:
 - 1. Building code:
 - a. International Building Code.
 - 2. Electrical code:
 - a. NFPA 70: National Electric Code.
 - 3. Fire code:
 - a. International Fire Code.
 - 4. Mechanical codes:
 - a. International Mechanical Code.
 - 5. Plumbing code:
 - a. International Plumbing Code.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01424

ABBREVIATIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Abbreviations and meanings.

1.02 INTERPRETATIONS

- A. Interpret abbreviations by context in which abbreviations are used.

1.03 ABBREVIATIONS

- A. Abbreviations used to identify reference standards:

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturers Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
ABC	Associated Air Balance Council
ABPA	Acoustical and Board Products Association
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
ADC	Air Diffusion Council
ABMA	American Bearing Manufacturers' Association (formerly AFBMA, Anti-Friction Bearing Manufacturers' Association)
AGA	American Gas Association
AGC	Associated General Contractors
AGMA	American Gear Manufacturers' Association
AI	Asphalt Institute
AIA	American Institute of Architects
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
AMG	Arizona Masonry Guild
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
ARI	Air Conditioning and Refrigeration Institute
ASAHC	American Society of Architectural Hardware Consultants
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	ASTM International (Former name American Society for Testing and Materials. Still used in specifications.)

AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWSC	American Welding Society Code
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America
BSI	Building Stone Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPSC	U.S. Consumer Product Safety Commission
CRA	California Redwood Association
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards
CSI	Construction Specifications Institute
CTI	Ceramic Tile Institute
DHI	Door and Hardware Institute
EIFS	Exterior Insulation and Finish System
EJCDC	Engineers Joint Contract Documents Committee
FGMA	Flat Glass Marketing Association
FIA	Factory Insurance Association
FM	Factory Mutual
FS	Federal Specifications
FTI	Facing Tile Institute
GA	Gypsum Association
IAPMO	International Association of Plumbing and Mechanical Officials
IBC	International Building Code
ICBO	International Conference of Building Officials
ICC	International Code Council
IEEE	Institute of Electrical and Electronics Engineers
MAG	Maricopa Association of Governments
MIA	Marble Institute of America
ML/SFA	Metal Lath/Steel Framing Association
MS	Military Specifications
NAAMM	National Association of Architectural Metal Manufacturers
NAPA	National Asphalt Pavement Association
NBHA	National Builders Hardware Association
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NECA	National Electrical Contractors Association
NETA	International Electrical Testing Association
NEMA	National Electrical Manufacturers Association

NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NIST	National Institute of Standards and Technology
NMWIA	National Mineral Wood Insulation Association
NPCA	National Paint and Coatings Association
NRCA	National Roofing Contractors Association
NTMA	National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturer's Association
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PDCA	Paint and Decorating Contractors of America
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
PS	Product Standard
RTI	Resilient Tile Institute
SAE	Society of Automotive Engineers
SCPA	Structural Clay Products Association
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Society for Protective Coatings-Steel Structures Painting Council
TCA	Tile Council of America
UBC	Uniform Building Code (ICBO)
UL	Underwriters Laboratories, Inc.
UNS	Unified Numbering System
USDA	United States Department of Agriculture
VA	Vermiculite Association
WCLA	West Coast Lumberman's Association
WCLIB	West Coast Lumber Inspection Bureau
WPA	Western Pine Association
WPOA	Western Plumbing Officials Association
WRC	Welding Research Council
WSCPA	Western States Clay Products Association
WWPA	Western Wood Products Association

B. Abbreviations used in Specifications:

a	year or years (metric unit)
A	ampere or amperes
am	ante meridian (before noon)
ac	alternating current
ac-ft	acre-foot or acre-feet
atm	atmosphere
AWG	American Wire Gauge

bbl	barrel or barrels
bd	board
bhp	brake horsepower
bil gal	billion gallons
BOD	biochemical oxygen demand
Btu	British thermal unit or units
Btuh	British thermal units per hour
bu	bushel or bushels
C	degrees Celsius
cal	calorie or calories
cap	capita
cd	candela or candelas
cfm	cubic feet per minute
Ci	curie or curies
cm	centimeter or centimeters
cmu	concrete masonry unit
CO	carbon monoxide
Co.	Company
CO ₂	carbon dioxide
COD	chemical oxygen demand
Corp.	Corporation
counts/min	counts per minute
cu	cubic
cu cm	cubic centimeter or centimeters
cu ft	cubic foot or feet
cu ft/day	cubic feet per day
cu ft/hr	cubic feet per hour
cu ft/min	cubic feet per minute
cu ft/sec	cubic feet per second
cu in	cubic inch or inches
cu m	cubic meter or meters
cu yd	cubic yard or yards
d	day (metric units)
day	day (English units)
db	decibels
DB	dry bulb (temperature)
dc	direct current
diam	diameter
DO	dissolved oxygen
DS	dissolved solids
EFF	effluent
emf	electromotive force
F	degrees Fahrenheit
fc	foot-candle or foot candles
FE	filter effluent
FI	filter influent
fpm	feet per minute
ft	feet or foot

ft/day	feet per day
ft/hr	feet per hour
ft/min	feet per minute
ft/sec	feet per second
g	gram or grams
G	gravitational force
gal	gallon or gallons
gal/day	gallons per day
gal/min	gallons per minutes
gal/sec	gallons per second
gfd	gallons per square foot per day
g/L	grams per liter
gpd	gallons per day
gpd/ac	gallons per day per acre
gpd/cap	gallons per day per capita
gpd/sq ft	gallons per day per square foot
gph	gallons per hour
gpm	gallons per minute
gps	gallons per second
h	hour or hours (metric units)
ha	hectare or hectares
hp	high point
hp	horsepower
hp-hr	horsepower-hour or horsepower-hours
hr	hour or hours (English units)
Hz	hertz
ID	inside diameter
ihp	indicated horsepower
IMLR	internal mixed liquor recycle
Inc.	Incorporated
inch	inch
inches	inches
inches/sec	inches per second
INF	influent
J	joule or joules
JTU	Jackson turbidity unit or units
k	kips
K	kelvin
K	thermal conductivity
kcal	kilocalorie or kilocalories
kcmil	thousand circular mils
kg	kilogram or kilograms
km	kilometer or kilometers
kN	kilonewton or kilonewtons
kPa	kilopascal or kilopascals
ksi	kips per square inch
kV	kilovolt or kilovolts

kVA	kilovolt-ampere or kilovolt-amperes
kW	kilowatt or kilowatts
kWh	kilowatt hour
L	liter or liters
lb/1000 cu ft	pounds per thousand cubic foot
lb/acre-ft	pounds per acre-foot
lb/ac	pounds per acre
lb/cu ft	pounds per cubic foot
lb/day/cu ft	pounds per day per cubic foot
lb/day/acre	pounds per day per acre
lb/sq ft	pounds per square foot
lin	linear, lineal
lin ft	linear foot or feet
lm	lumen or lumens
log	logarithm (common)
ln	logarithm (natural)
lx	lux
m	meter or meters
M	molar (concentration)
mA	milliampere or milliamperes
max	maximum
mCi	millicurie or millicuries
meq	milliequivalent
μ F	microfarad or microfarads
MFBM	thousand feet board measure
mfr	manufacturer
mg	milligram or milligrams
mgd/ac	million gallons per day per acre
mgd	million gallons per day
mg/L	milligrams per liter
μ g/L	micrograms per liter
μ m	micrometer or micrometers
mile	mile
mil. gal	million gallons
miles	miles
min	minimum
min	minute or minutes
MLSS	mixed liquor suspended solids
MLVSS	mixed liquor volatile suspended solids
mm	millimeter or millimeters
mol wt	molecular weight
mol	mole
Mpa	megapascal or megapascals
mph	miles per hour
MPN	most probable number
mR	milliroentgen or milliroentgens
Mrad	megarad or megarads
mV	millivolt or millivolts
MW	megawatt or megawatts

N	newton or newtons
N	normal (concentration)
No.	number
Nos	numbers
NRC	noise reduction coefficient
NTU or ntu	nephelometric turbidity unit
oc	on center
OD	outside diameter
ORP	oxidation-reduction potential
OT	ortho-tolidine
OTA	ortha-tolidine-arsenite
oz	ounce or ounces
oz/sq ft	ounces per square foot
Pa	pascal or pascals
pl	plate or property line
pm	post meridiem (afternoon)
ppb	parts per billion
ppm	parts per million
ppt	parts per thousand
pr	pair
psf/hr	pounds per square foot per hour
psf	pounds per square foot
psi	pounds per square inch
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PVC	polyvinyl chloride
qt	quart or quarts
R	radius
R	roentgen or roentgens
rad	radiation absorbed dose
RH	relative humidity
rpm	revolutions per minute
rps	revolutions per second
s	second (metric units)
S	Siemens (mho)
SDI	sludge density index or silt density index
sec	second (English units)
SI	International System of Units
sp	static pressure
sp gr	specific gravity
sp ht	specific heat
sq	square
cm ² or sq cm	square centimeter or centimeters
sq ft	square feet or foot
sq inch	square inch
sq inches	square inches
km ² or sq km	square kilometer or kilometers
m ² or sq m	square meter or meters

mm ² or sq mm	square millimeter or millimeters
sq yd	square yard or yards
SS	suspended solids
STC	Sound Transmission Class
SVI	sludge volume index
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TLM	median tolerance limit
TOC	total organic carbon
TOD	total oxygen demand
TOW	top of weir
TS	total solids
TSS	total suspended solids
TVS	total volatile solids
U	U Factor/U Value
U	Coefficient of Heat Transfer
U	heat transfer coefficient
UNS	Uniform Numbering System
US	United States
UV	ultraviolet light
V	volt or volts
VA	volt-ampere or volt-amperes
W	watt or watts
WB	wet bulb
wg	water gauge
wk	week or weeks
WRF	water reclamation facility
wt	weight
yd	yard or yards
yr	year or years (English unit)

C. Abbreviations used on Drawings: As listed on Drawings or in Specifications.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01450
QUALITY CONTROL

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Quality control and control of installation.
 - 2. Tolerances.
 - 3. References.
 - 4. Mock-up requirements.
 - 5. Authority and duties of Owner's representative or inspector.
 - 6. Sampling and testing.
 - 7. Testing and inspection services.
 - 8. Contractor's responsibilities.

- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01455 - Special Tests and Inspections.

1.02 QUALITY CONTROL AND CONTROL OF INSTALLATION

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

- H. When specified, products will be tested and inspected either at point of origin or at Work site:
 - 1. Notify Engineer in writing 10 calendar days in advance of when products will be ready for testing and inspection at point of origin.
 - 2. Do not construe that satisfactory tests and inspections at point of origin is final acceptance of products. Satisfactory tests or inspections at point of origin do not preclude retesting or re-inspection at Work site.
- I. Do not ship products which require testing and inspection at point of origin prior to testing and inspection.

1.03 TOLERANCES

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

1.04 REFERENCES

- A. American Society for Testing and Materials (ASTM): E 329 - Standard for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
- B. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- C. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.
- D. Obtain copies of standards where required by product specification sections.
- E. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

1.05 MOCK-UP REQUIREMENTS

- A. Tests will be performed under provisions identified in this Section and identified in respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be comparison standard for remaining Work.
- D. Where mock-up has been accepted by Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Engineer.

1.06 AUTHORITY AND DUTIES OF OWNER'S REPRESENTATIVE OR INSPECTOR

- A. Owner's Project Representative employed or retained by Owner is authorized to inspect the Work.
- B. Inspections may extend to entire or part of the Work and to preparation, fabrication, and manufacture of products for the Work.
- C. Deficiencies or defects in the Work which have been observed will be called to Contractor's attention.
- D. Inspector will not:
 - 1. Alter or waive provisions of Contract Documents.
 - 2. Inspect Contractor's means, methods, techniques, sequences, or procedures for construction.
 - 3. Accept portions of the Work, issue instructions contrary to intent of Contract Documents, or act as foreman for Contractor. Supervise, control, or direct Contractor's safety precautions or programs; or inspect for safety conditions on Work site, or of persons thereon, whether Contractor's employees or others.
- E. Inspector will:
 - 1. Conduct on-site observations of the Work in progress to assist Engineer in determining when the Work is, in general, proceeding in accordance with Contract Documents.
 - 2. Report to Engineer whenever Inspector believes that Work is faulty, defective, does not conform to Contract Documents, or has been damaged; or whenever there is defective material or equipment; or whenever Inspector believes the Work should be uncovered for observation or requires special procedures.

1.07 SAMPLING AND TESTING

- A. General:
 - 1. Prior to delivery and incorporation in the Work, submit listing of sources of materials, when specified in sections where materials are specified.
 - 2. When specified in sections where products are specified:
 - a. Submit sufficient quantities of representative samples of character and quality required of materials to be used in the Work for testing or examination.
 - b. Test materials in accordance with standards of national technical organizations.
- B. Sampling:
 - 1. Furnish specimens of materials when requested.
 - 2. Do not use materials which are required to be tested until testing indicates satisfactory compliance with specified requirements.
 - 3. Specimens of materials will be taken for testing whenever necessary to determine quality of material.
- C. Testing:
 - 1. As specified in Section 01455.

- D. Test standards:
1. Perform sampling, specimen preparation, and testing of materials in accordance with specified standards, and when no standard is specified, in accordance with standard of nationally recognized technical organization.
 2. Physical characteristics of materials not particularly specified shall conform to standards published by ASTM, where applicable.
 3. Standards and publication references in Contract Documents shall be edition or revision in effect on date stipulated in the Contract Documents.

1.08 TESTING AND INSPECTION SERVICES

- A. Contractor will employ and pay for specified services of an independent firm to perform Contractor quality control testing as required in the technical specifications for various work and materials.
- B. Owner will employ and pay for specified services of an "Owner's independent testing firm" to perform testing and inspection as needed to verify that specifications are met.
- C. The qualifications of laboratory that will perform the testing, contracted by the Owner or by the Contractor, shall be as follows:
1. Has authorization to operate in the state where the project is located.
 2. Meets "Recommended Requirements for Independent Laboratory Qualification," published by American Council of Independent Laboratories.
 3. Meets requirements of ASTM E 329.
 4. Laboratory Staff: Maintain full time specialist on staff to review services.
 5. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to National Bureau of Standards (NBS) or accepted values of natural physical constants.
 6. Will submit copy of report of inspection of facilities made by Materials Reference Laboratory of NBS during most recent tour of inspection, with memorandum of remedies of deficiencies reported by inspection.
- D. Testing, inspections and source quality control may occur on or off project site. Perform off-site testing inspections and source quality control as required by Engineer or Owner.
- E. Reports will be submitted by testing firm to Engineer, Contractor, and Owner in triplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents. Each report shall include:
1. Date issued.
 2. Project title and number.
 3. Testing laboratory name, address, and telephone number.
 4. Name and signature of laboratory inspector.
 5. Date and time of sampling or inspection.
 6. Record of temperature and weather conditions.
 7. Date of test.
 8. Identification of product and specification section.
 9. Location of sample or test in Project.
 10. Type of inspection or test.
 11. Results of tests and compliance with Contract Documents.
 12. Interpretation of test results, when requested by Engineer.

- F. Contractor shall cooperate with Owner's independent testing firm, furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Engineer and Owner's independent testing firm 48 hours prior to expected time for operations requiring testing.
 - 2. Make arrangements with Owner's independent testing firm and pay for additional samples and tests required for Contractor's use.

- G. Limitations of authority of testing Laboratory: Owner's independent testing firm or Laboratory is not authorized to:
 - 1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency or laboratory may not approve or accept any portion of the Work.
 - 3. Agency or laboratory may not assume duties of Contractor.
 - 4. Agency or laboratory has no authority to stop the Work.

- H. Testing and employment of an Owner's independent testing firm or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

- I. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same Owner's independent testing firm on instructions by Engineer. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.

- J. The Owner's independent testing firm responsibilities will include:
 - 1. Test samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
 - 6. Perform additional tests required by Engineer.
 - 7. Attend preconstruction meetings and progress meetings.

- K. Owner's independent testing firm individual test reports: After each test, Owner's independent testing firm will promptly submit electronically and three hard copies of report to Engineer and to Contractor. When requested by Engineer, the Owner's independent testing firm will provide interpretation of test results. Include the following:
 - 1. Date issued.
 - 2. Project title and number.
 - 3. Name of inspector.
 - 4. Date and time of sampling or inspection.
 - 5. Identification of product and specifications section.
 - 6. Location in Project.
 - 7. Type of inspection or test.
 - 8. Date of test.

9. Certified test results stamped and signed by a registered Engineer in the State of Arizona.
 10. Summary of conformance with Contract Documents.
- L. Testing firm will provide monthly report of certification to identify all work performed for special inspections and other contract requirements on this project. The following certified monthly report at a minimum will include but not limited to:
1. Results of testing.
 2. Testing logs.
 3. Outstanding deficiencies.
 4. Various statistical data.
 5. Testing curves (up to 4 types) as required by the Engineer.

1.09 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with testing firm or laboratory personnel and provide access to construction and manufacturing operations.
- B. Secure and deliver to testing firm or laboratory adequate quantities of representative samples of materials proposed to be used and which require testing.
- C. Provide to testing firm or laboratory and Engineer preliminary mix design proposed to be used for concrete, and other materials mixes which require control by testing laboratory.
- D. Furnish electronically and 5 hard copies of product test reports.
- E. Furnish incidental labor and facilities:
 1. To provide access to construction to be tested.
 2. To obtain and handle samples at Work site or at source of product to be tested.
 3. To facilitate inspections and tests.
 4. For storage and curing of test samples.
- F. Notify Owner's independent testing firm or laboratory 48 hours in advance of when observations, inspections and testing is needed for laboratory to schedule and perform in accordance with their notice of response time.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01455

SPECIAL TESTS AND INSPECTIONS

PART 1 GENERAL

1.01 SUMMARY

- A. This Section is supplemental to the Owner's General Conditions.
- B. Section includes: This Section describes the requirements for providing special tests and inspections required by Laws and Regulations.
- C. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.

1.02 REFERENCES

- A. International Building Code (IBC 2006).

1.03 DESCRIPTION

- A. This Section describes special tests and inspections of structural assemblies and components to be performed in compliance with IBC 2006.
- B. These special tests and inspections are in addition to the requirements specified in the General Conditions Item No. 58, and by the individual Sections.
- C. The Engineer of record acting as the Owner's agent will employ 1 or more inspectors who will provide special inspections during construction.
- D. The Contractor shall employ a testing laboratory to obtain and test materials during construction in accordance with Specification 01450. The testing laboratory shall be pre-approved by the Owner, or the Engineer of record acting as the Owner's agent.

1.04 INSPECTION

- A. Duties of Special Inspector:
 - 1. General: Required duties of the Special Inspector are described in IBC 2006.

1.05 TESTS

- A. Selection of the material required to be tested shall be by the testing laboratory and not the Contractor.

1.06 SPECIAL TESTING AND INSPECTIONS

- A. Testing laboratory: Special quality control tests will be performed by the Contractor's testing laboratory as specified in Section 01450. The Owner may employ a testing laboratory to perform quality assurance tests.
- B. The following types of work require special inspection as described in IBC 2006. Refer to the following verification, testing and inspection schedules.
 - 1. Appendix A, Cast-In-Place Concrete Special Inspection and Testing Schedule.
 - 2. Appendix B, Essential Architectural, Mechanical and Electrical Inspection Schedule.
 - 3. Appendix C, Essential Masonry Special Inspection Schedule.
 - 4. Appendix D, Soils Verification and Inspection Schedule.
 - 5. Appendix E, Structural Steel Special Inspection Schedule.
 - 6. Appendix F, Other Special Inspection Schedule.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 SCHEDULE

- A. The Contractor shall allow time necessary for Special Inspections as listed above.
- B. Sufficient notice shall be given so that the Special Inspections can be performed. This includes time for off-site Special Inspectors to plan the inspection and travel to site.

3.02 PROCEDURE

- A. The Special Inspector will immediately notify the Engineer of any corrections required and follow notification with appropriate documentation.
- B. The Contractor shall not proceed until the work is satisfactory to the Engineer.

END OF SECTION

**APPENDIX A
CAST-IN-PLACE CONCRETE SPECIAL INSPECTION AND TESTING SCHEDULE**

Verification and Inspection	Reference Standard	Frequency of Inspection	
		Continuous During Task Listed	Periodic During Task Listed
1. Inspection of reinforcing steel, including prestressing tendons, and placement.		–	X
2. Inspection of reinforcing steel welding.	IBC Table 1704.3, Item 5B	–	–
3. Inspect bolts to be installed in concrete prior to and during placement of concrete.		X	–
4. Verifying use of required design mix.		–	X
5. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.		X	–
6. Inspection of concrete and shotcrete placement for proper application techniques.		X	–
7. Inspection for maintenance of specified curing temperature and techniques.		–	X

**APPENDIX B
ESSENTIAL ARCHITECTURAL, MECHANICAL AND ELECTRICAL
INSPECTION SCHEDULE**

Verification and Inspection	Reference Standard	Frequency of Inspection	
		Continuous During Task Listed	Periodic During Task Listed
1. Suspended ceiling system including anchorage.		–	X
2. Anchorage of electrical equipment for emergency standby power.		–	X
3. Anchorage of other electrical or mechanical equipment over 1,000 lb. on floors or roofs.		–	X
4. Anchorage of ducts greater than 6 sf in cross-section.		–	X
5. Anchorage of pipelines greater than 8 inches in diameter.		–	X
6. Steel storage racks supporting pipelines.		–	X
7. Chlorine cylinders and anchorage in Chemical Building.		X	–
8. Elevator installation.		–	X

**APPENDIX C
ESSENTIAL MASONRY SPECIAL INSPECTION SCHEDULE**

Verification and Inspection	Reference Standard	Frequency of Inspection	
		Continuous During Task Listed	Periodic During Task Listed
1. From the beginning of masonry construction, the following shall be verified for compliance:			
a. Proportions of site-prepared mortar and grout.		–	X
b. Placement of masonry units and construction of mortar joints.		–	X
c. Placement of reinforcement and connectors.		–	X
d. Grout space prior to grouting.		X	–
e. Placement of grout.		X	–
2. The inspection program shall verify:			
a. Size and location of structural elements.		–	X
b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.		X	–
c. Specified size, grade and type of reinforcement.			X
d. Welding of reinforcing couplers.		X	–
e. Protection of masonry during cold weather (temperature below 40° F) or hot weather (temperature above 90° F).		–	X
3. Preparation of any required grout specimens, mortar specimens and/or prisms shall be observed.		X	–
4. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.		–	X

**APPENDIX D
SOILS VERIFICATION AND INSPECTION SCHEDULE**

Verification and Inspection	Reference Standard	Frequency of Inspection	
		Continuous During Task Listed	Periodic During Task Listed
1. Verify materials below footings are adequate to achieve the design bearing capacity.		–	X
2. Verify excavations are extended to proper depth and have reached proper material.		–	X
3. Perform classification and testing of controlled fill materials.		–	X
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill.		X	–
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly.		–	X

**APPENDIX E
STRUCTURAL STEEL SPECIAL INSPECTION SCHEDULE**

Verification and Inspection	Reference Standard	Frequency of Inspection	
		Continuous During Task Listed	Periodic During Task Listed
1. Material verification of high-strength bolts, nuts and washers:			
a. Identification markings to conform to ASTM standards specified in the approved construction documents.		–	X
b. Manufacturer's certificate of compliance required.		–	X
2. Inspection of high-strength bolting:			
a. Bearing-type connections.		–	X
b. Slip-critical connections.		X	X
3. Material verification of structural steel:			
a. Identification markings to conform to ASTM standards specified in the approved construction documents.		–	X
b. Manufacturers' certified mill test reports.		X	–
4. Material verification of weld filler materials:			
a. Identification markings to conform to AWS specification in the approved construction documents.		–	X
b. Manufacturer's certificate of compliance required.		–	X
5. Inspection of welding:			
a. Structural steel:		–	–
1) Complete and partial penetration groove welds.		X	–
2) Multi-pass fillet welds.		X	–
3) Single-pass fillet welds > 5/16".		X	–
4) Single-pass fillet welds ≤ 5/16".		–	X
5) Floor and deck welds.		–	X
6. Inspection of steel frame joint details for compliance with approved construction documents:			X
a. Details such as bracing and stiffening.		X	–
b. Member locations.		X	–
c. Application of joint details at each connection.		X	

SECTION 01460

CONTRACTOR QUALITY CONTROL PLAN

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Contractor Quality Control Plan.

1.02 SUBMITTALS

- A. Qualifications of the Contractor's Quality Control (CQC) Plan Manager must include all qualifying registrations and show that the candidate has had experience on projects of similar type and size.
- B. Contractor's Daily Quality Control Report: Submit to Engineer within 1 day of completion of each inspection.
- C. Daily Inspection Report: Submit to Engineer at the end of each working day or no later than prior to the beginning of the next working day.

1.03 CONTRACTOR'S INSPECTION OF THE WORK

- A. Work performed by Contractor shall be inspected by the Contractor's CQC Plan Manager. Non-conforming Work and any safety hazards in the Work area shall be noted and promptly corrected.
- B. No materials or equipment shall be used in Work without inspection and acceptance by Contractor's CQC Plan Manager.

1.04 QUALIFICATIONS

- A. Contractor's CQC Plan Manager: Demonstrate having performed similar CQC functions on similar type projects. Submit records of personnel experience, training, and qualifications.

1.05 COVERING WORK

- A. Whenever Contractor intends to backfill, bury, cast in concrete, or otherwise cover any Work, notify Engineer not less than 24 hours in advance to request inspection before beginning any such Work of covering. Failure of Contractor to notify Engineer in accordance with this requirement shall be resolved according to the General Conditions.

1.06 REJECTED WORK

- A. Failure to promptly remove and replace rejected Work will be considered a breach of this Contract, and Owner may proceed under provisions of the General Conditions.

1.07 CONTRACTOR'S QUALITY CONTROL PROGRAM

- A. General: Establish and execute a Quality Control (CQC) Plan for Work. The plan shall establish adequate measures for verification and conformance to defined requirements by Contractor personnel and lower-tier Subcontractors (including Fabricators, Suppliers, and Subcontractors). This program shall be described in a Plan responsive to this Section.

- B. CQC personnel:
 - 1. Contractor's CQC Plan Manager shall report to a Senior Project Manager of the Contractor and shall have no supervisory or managerial responsibility over the workforce.
 - 2. The Contractor CQC Plan Manager shall be on-site as often as necessary, but not less than the daily working hours specified in the Contract Documents to remedy and demonstrate that Work is being performed properly and to make multiple observations of Work in progress.
 - 3. The Contractor is to furnish personnel with assigned CQC functions reporting to the CQC Manager. Persons performing CQC functions shall have sufficient qualifications, authority, and organizational freedom to identify quality problems and to initiate and recommend solutions.

- C. CQC Plan:
 - 1. Contractor's CQC Plan shall include a statement by the Senior Project Manager designating the CQC Plan Manager and specifying the authority delegated to the CQC Plan Manager to direct cessation or removal and replacement of defective Work.
 - 2. Describe the CQC program and include procedures, work instructions, and records. Describe methods relating to areas that require special testing and procedures as required by the specifications.
 - 3. Include specific instructions defining procedures for observing Work in process and comparing this Work with the Contract requirements (organized by specifications section).
 - 4. Describe procedures to ensure that equipment or materials that have been accepted at the Site are properly stored, identified, installed and tested.
 - 5. Include procedures to verify that procured products and services conform to the requirements of the Specifications. Requirements of these procedures shall be applied, as appropriate, to lower-tier Suppliers and/or Subcontractors.
 - 6. Startup and testing quality control: Include procedures to verify that the startup and testing requirements of the Contract Documents are integrated into the Contractor's CQC Plan and conform to the requirements of the Specifications. Requirements of these procedures shall be applied, as appropriate, to the Contractor and the lower-tier Suppliers and/or Subcontractors.
 - 7. Include instructions for recording inspections and requirements for demonstrating through the Daily Inspection Reports that Work inspected was in compliance or a deficiency was noted and action to be taken.
 - 8. Procedures to preclude the covering of deficient or rejected Work.
 - 9. Procedures for halting or rejecting Work.
 - 10. Procedures for resolution of differences between the CQC Plan Manager and the production personnel.
 - 11. Identify contractual hold/inspection points as well as any Contractor-imposed hold/inspection points.

- D. Daily Inspection Report: Include, at a minimum:
1. Inspection of specific work.
 2. Quality characteristics in compliance.
 3. Quality characteristics not in compliance.
 4. Corrective/remedial actions taken.
 5. Statement of certification.
 6. CQC Manager's signature.
 7. Information provided on the daily report shall not constitute notice of delay or any other notice required by the Contract Documents.
- E. Deficient and Non-conforming Work and Corrective Action: Include procedures for handling deficiencies and non-conforming Work. Deficiencies and non-conforming Work are defined as documentation, drawings, material, equipment, or Work not conforming to the indicated requirements or procedures. The procedure shall prevent non-conformances by identification, documentation, evaluation, separation, disposition, and corrective action to prevent reoccurrence. Conditions having adverse effects on quality shall be promptly identified and reported to the senior level management. The cause of conditions adverse to quality shall be determined and documents and measures implemented to prevent recurrence. In addition, at a minimum, this procedure shall address:
1. Personnel responsible for identifying deficient and non-complying items within Work.
 2. How and by whom deficient and non-compliant items are documented "in the field."
 3. The personnel and process utilized for logging deficient and non-compliant Work at the end of each day onto a deficiency log.
 4. Tracking processes and tracking documentation for deficient and non-conforming Work.
 5. Personnel responsible for achieving resolution of outstanding deficiencies.
 6. Include detailed procedures for the performance and control of special process (e.g., welding, soldering, heat treating, cleaning, plating, nondestructive examination, etc.).
- F. Audits: The CQC program shall provide for regularly scheduled documented audits to verify that CQC procedures are being fully implemented by Contractor and its Subcontractors. Audit records shall be made available to Engineer upon request.
- G. Documented control/quality records:
1. Establish methods for control of Contract Documents that describe how Drawings and Specifications are received and distributed to assure the correct issue of the document being used. Describe how record document/drawing data are documented and furnished to Engineer.
 2. Maintain evidence of activities affecting quality. Including operating logs, records of inspection, audit reports, personnel qualification and certification records, procedures, and document review records.
 3. Maintain quality records in a manner that provides for timely retrieval and traceability. Protect quality records from deterioration, damage and destruction.
 4. Develop a list of specific records as required by the Contract Documents that will be furnished to Engineer at the completion of activities.

- H. Acceptance of CQC Plan: Engineer's acceptance of the CQC Plan shall not relieve Contractor from any of its obligations for performance of Work. Contractor's CQC staffing is subject to Engineer's review and continued acceptance. Owner, at its sole option, and without cause, may direct Contractor to remove and replace the CQC Plan Manager.
1. Acceptance of the CQC Plan by the Engineer is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction.
 2. After acceptance of the CQC Plan, notify the Engineer in writing of any proposed change. Proposed changes are subject to acceptance by the Engineer.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Furnishing, maintaining, and removing construction facilities and temporary controls, including temporary utilities, construction aids, barriers and enclosures, security, access roads, temporary controls, field offices and sheds, and removal after construction.

1.02 SUBMITTALS

- A. General: For products specified to be furnished under this Section, submit product data in accordance with General Condition Item No. 25.
- B. For temporary piping systems:
 - 1. Submit layout drawings showing proposed routing of piping, including proposed pipe support and pipe restraint locations.
 - 2. Submit product data for piping, fittings, appurtenances, restraints, supports, and all other components of the temporary piping system.
 - 3. Submit all information at least 28 days prior to when each temporary piping system is scheduled to be installed and allow 14 days for review and comment by Engineer and Owner.
- C. For temporary pumping systems:
 - 1. Submit pump data, performance curves, and other operating information as specified in the General Conditions of the contract, Item 25.
 - 2. Submit sketches showing layout of temporary pumping system, including pump quantity, configuration in wet well, and proposed piping layout specified in Paragraph 1.02 B.
 - 3. Submit piping head loss calculations based on proposed temporary piping system layout.
- D. Submit all information at least 28 days prior to when the temporary pumping system is scheduled to be installed and allow 14 days for review and comment by Engineer and Owner.
- E. For staking and surveying:
 - 1. The Contractor shall be responsible for providing all construction staking and surveying needed to construct the facilities in accordance with the Contract Documents.
 - 2. Submit listing of lines, grades, distances and curve information used to establish project staking as specified in General Conditions of the contract, Item 15.

1.03 TEMPORARY UTILITIES

- A. Temporary electrical power:
 - 1. Arrange with local utility to provide adequate temporary electrical service.
 - 2. Provide and maintain adequate jobsite power distribution facilities conforming to applicable Laws and Regulations.
 - 3. Provide, maintain, and pay for electric power for performance of the Work except for power required for the final 7-day operational test (see Section 01756):
 - a. When using permanent facilities, provide separate meter and reimburse Owner for power used in connection with performance of the Work.
- B. Temporary electrical lighting:
 - 1. In work areas, provide temporary lighting sufficient to maintain lighting levels during working hours not less than lighting levels required by Occupational Safety and Health Administration (OSHA) and state agency which administers OSHA regulations where Project is located.
 - 2. When available, permanent lighting facilities may be used in lieu of temporary facilities:
 - a. Prior to final acceptance of the Work, replace bulbs, lamps, or tubes used by Contractor for lighting.
- C. Temporary water:
 - 1. Reclaimed Water will be provided to the Contractor for dust control and other on-site construction uses at no cost to the Contractor, according to General Conditions, Item No. 18 and any modifications thereto in the Special Conditions.
 - 2. Remove temporary piping and connections and restore affected portions of the facility to original condition before final acceptance.
- D. Temporary sanitary facilities:
 - 1. Provide suitable and adequate sanitary facilities that are in compliance with applicable laws and regulations.
 - 2. At completion of the Work, remove sanitary facilities and leave site in neat and sanitary condition.
- E. Temporary fire protection: Provide sufficient number of fire extinguishers of type and capacity required to protect the Work and ancillary facilities.
- F. First aid: Post first aid facilities and information posters conforming to requirements of OSHA and other applicable Laws and Regulations in readily accessible locations.
- G. Utilities in existing facilities: See Section 01140.

1.04 CONSTRUCTION AIDS

- A. Provide railings, kick plates, enclosures, safety devices, and controls required by Laws and Regulations and as required for adequate protection of life and property.
- B. Use construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities of ample size and capacity to adequately support and move loads. Contractor shall be solely responsible for selecting and using appropriate equipment for specific project conditions.

- C. Design temporary supports with adequate safety factor to assure adequate load bearing capability:
 - 1. When requested, submit design calculations by professional registered engineer prior to application of loads.
 - 2. Submitted design calculations are for information and record purposes only.
- D. Accident prevention:
 - 1. Exercise precautions throughout construction for protection of persons and property.
 - 2. Observe safety provisions of applicable Laws and Regulations.
 - 3. Guard machinery and equipment, and eliminate other hazards.
 - 4. Make reports required by authorities having jurisdiction, and permit safety inspections of the Work.
 - 5. Before commencing construction work, take necessary action to comply with provisions for safety and accident prevention.
- E. Barricades:
 - 1. Place barriers at ends of excavations and along excavations to warn pedestrian and vehicular traffic of excavations.
 - 2. Provide barriers with flashing lights after dark.
 - 3. Keep barriers in place until excavations are entirely backfilled and compacted.
 - 4. Barricade excavations to prevent persons from entering excavated areas in streets, roadways, parking lots, treatment plants, or other public or private areas.
- F. Warning devices and barricades: Adequately identify and guard hazardous areas and conditions by visual warning devices and, where necessary, physical barriers:
 - 1. Devices shall conform to minimum requirements of OSHA and State agency which administers OSHA regulations where Project is located.
- G. Hazards in protected areas: Mark or guard excavations in areas from which public is excluded, in manner appropriate for hazard.
- H. Above grade protection: On multi-level structures, provide safety protection that meets requirements of OSHA and State agency which administers OSHA regulations where Project is located.
- I. Protect existing structures, trees, shrubs, and other items to be preserved on Project site from injury, damage or destruction by vehicles, equipment, worker or other agents with substantial barricades or other devices commensurate with hazards.

1.05 ACCESS ROADS

- A. On-site access roads:
 - 1. Maintain access roads to storage areas and other areas to which frequent access is required.
 - 2. Maintain similar roads to existing facilities on site of the Work to provide access for maintenance and operation.
 - 3. Protect buried vulnerable utilities under temporary roads with steel plates, wood planking, or bridges.
 - 4. Maintain on-site access roads free of mud. Under no circumstances shall vehicles leaving the site track mud off the site onto the public right-of-way.

1.06 TEMPORARY CONTROLS

- A. Dust control:
 - 1. Prevent dust nuisance caused by operations, unpaved roads, excavation, backfilling, demolition, or other activities.
 - 2. Control dust by sprinkling with water, use of dust palliatives, modification of operations, or other means acceptable to agencies having jurisdiction.
- B. Noise control:
 - 1. In inhabited areas, particularly residential, perform operations in manner to minimize noise.
 - 2. In residential areas, take special measures to suppress noise during night hours.
- C. Mud control:
 - 1. Prevent mud nuisance caused by construction operations, unpaved roads, excavation, backfilling, demolition, or other activities.

1.07 FIELD OFFICES AND SHEDS

- A. Contractor's field office:
 - 1. Maintain on Project Site weathertight space in which to keep copies of Contract Documents, progress schedule, shop drawings, and other relevant documents.

1.08 PROTECTION OF WORK AND PROPERTY

- A. Contractor, at no additional expense to Owner, shall at all times safely guard and protect his Work apparatus, equipment, and material from accidental or any other damage in accordance with the General Conditions of this Contract, Item No. 42.
- B. Contractor, at no additional expense to Owner, shall at all times safely guard and protect the Owner's property in accordance with the General Conditions of this Contract, Item No. 43.

1.09 REMOVAL

- A. Remove temporary buildings and furnishings before inspection for final completion or when directed.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Remove underground installations to minimum depth of 24 inches and grade to match surrounding conditions.
- D. Restore existing facilities used during construction to specified or original condition.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Product requirements; product selection; product options and substitutions; quality assurance; delivery, handling, and storage; and manufacturer's instructions.
 - 1. Related section: The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 09960 - High Performance Coatings.

1.02 DEFINITIONS

- A. Execution: Inclusive of performance, workmanship, installation, erection, application, field fabrication, field quality control, and protection of installed products.
- B. Products: Inclusive of material, equipment, systems, shop fabrications, mixing, source quality control.

1.03 PRODUCT REQUIREMENTS

- A. Comply with Specifications and referenced standards as minimum requirements.
- B. Provide products by same manufacturer when products are of similar nature, unless otherwise specified.
- C. Provide identical products when products are required in quantity.
- D. Provide products with interchangeable parts whenever possible.
- E. Require each equipment manufacturer to have maintenance facilities meeting the following requirements:
 - 1. Minimum 3 years operational experience.
 - 2. Location in continental United States.
 - 3. Equipment and tools capable of making repairs.
 - 4. Staff qualified to make repairs.
 - 5. Inventory of maintenance spare parts.

1.04 PRODUCT SELECTION

- A. When products are specified by standard or specification designations of technical societies, organizations, or associations only, provide products which meet or exceed reference standard and Specifications.
- B. When products are specified with names of manufacturers but no model numbers or catalog designations, provide:
 - 1. Products by 1 of named manufacturers which meets or exceeds Specifications.
 - 2. Accepted or equal.
- C. When products are specified with names of manufacturers and model numbers or catalog designations, provide:
 - 1. Products with model numbers or catalog designations by 1 of named manufacturers.
 - 2. Accepted or equal.
- D. When products are specified with names of manufacturers, but with brand or trade names, model numbers, or catalog designations by 1 manufacturer only, provide:
 - 1. Products specified by brand or trade name, model number, or catalog designation.
 - 2. Products by 1 of named manufacturers proven in accordance with requirements for or equals to meet or exceed quality, appearance and performance of specified brand or trade name, model number, or catalog designation.
 - 3. Accepted or equal.
- E. When Products are specified with only 1 manufacturer followed by "or Equal," provide:
 - 1. Products meeting or exceeding Specifications by specified manufacturer.
 - 2. Accepted or equal.

1.05 LEAD LIMITS

- A. Materials in contact with drinking waters: In accordance with NSF 61 and NSF 372.

1.06 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. General: Whenever a product is specified using a name of a particular manufacturer or supplier, the specific item cited shall be understood as establishing type, function, dimension, appearance, and quality desired. Other manufacturer's products will be considered for acceptance provided sufficient information is submitted to the Engineer for review to determine that the products proposed are equivalent to those named.

1.07 QUALITY ASSURANCE

- A. Employ entities, that meet or exceed specified qualifications, to execute the Work.
- B. Inspect conditions before executing subsequent portions of the Work. Accept responsibility for correcting unsatisfactory conditions upon executing subsequent portions of the Work.

- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.08 DELIVERY, HANDLING, AND STORAGE

- A. Prepare products for shipment by:
 - 1. Applying grease and lubricating oil to bearings and similar items.
 - 2. Separately packing or otherwise suitably protecting bearings.
 - 3. Tagging or marking products to agree with delivery schedule or shop drawings.
 - 4. Including complete packing lists and bills of material with each shipment.
 - 5. Packaging products to facilitate handling and protection against damage during transit, handling, and storage.
- B. Transport products by methods that avoids product damage. Deliver products in undamaged condition in manufacturer's unopened containers or packaging.
- C. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- D. Upon delivery, promptly inspect shipments. Verify compliance with Contract Documents, correct quantities, and undamaged condition of products. Immediately store and protect products and materials until installed in Work.
- E. Store products with seals and legible labels intact.
- F. Store moisture sensitive products in weathertight enclosures.
- G. Maintain products within temperature and humidity ranges required or recommended by manufacturer.
- H. Connect and operate space heaters during storage when ambient temperatures fall below temperatures recommended by manufacturer.
- I. Protect painted surfaces against impact, abrasion, discoloration, and other damage. Repaint damaged painted surfaces.
- J. Exterior storage of fabricated products:
 - 1. Place on aboveground supports which allow for drainage.
 - 2. Cover products subject to deterioration with impervious sheet covering.
 - 3. Provide ventilation to prevent condensation under covering.
- K. Store loose granular materials on solid surfaces in well-drained area. Prevent materials mixing with foreign matter.
- L. Provide access for inspection.
- M. Maintain equipment per the manufacturer's recommendation and industry standards, including oil changes, rotation, etc. Provide a log of equipment maintenance to the Engineer on a monthly basis.

1.09 MANUFACTURER'S INSTRUCTIONS

- A. Deliver, handle, store, install, erect, or apply products in accordance with manufacturer's instructions, Contract Documents, and industry standards.
- B. Periodically inspect to assure products are undamaged and maintained under required conditions.

PART 2 PRODUCTS

2.01 SPARE PARTS

- A. Protect parts subject to deterioration, such as ferrous metal items and electrical components with appropriate lubricants, desiccants, or hermetic sealing.
- B. Spare parts inventory list:
 - 1. Equipment tag number.
 - 2. Equipment manufacturer.
 - 3. Subassembly component, if appropriate.
 - 4. Quantity.
 - 5. Storage location.
- C. Large items:
 - 1. Weight: Greater than 50 pounds.
 - 2. Size: Greater than 24 inches wide by 18 inches high by 36 inches long.
 - 3. Stored individually.
 - 4. Clearly labeled:
 - a. Equipment tag number.
 - b. Equipment manufacturer.
 - c. Subassembly component, if appropriate.
- D. Smaller items:
 - 1. Weight: Less than 50 pounds.
 - 2. Size: Less than 24 inches wide by 18 inches high by 36 inches long.
 - 3. Stored in spare parts box.
- E. Spare parts box:
 - 1. Wooden box:
 - a. Size: 24 inches wide by 18 inches high by 36 inches long.
 - 2. Hinged wooden cover
 - a. Strap type hinges.
 - b. Locking hasp.
 - c. Spare parts inventory list taped to underside of cover.
 - 3. Coating: As specified in Section 09960.
 - 4. Clearly labeled:
 - a. The words "Spare Parts".
 - b. Equipment tag number.
 - c. Equipment manufacturer.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01610

PROJECT DESIGN CRITERIA

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Project design criteria such as temperature and site elevation.

1.02 PROJECT DESIGN CRITERIA

- A. All equipment and materials for the project are to be suitable for performance in wastewater treatment plant or pump station environment and under following conditions:
 - 1. Design temperatures are:
 - a. Outdoor temperatures: -15 to 45 degrees Celsius.
 - b. Indoor temperatures for the following buildings:
 - 1) Electrical rooms: 5 to 35 degrees Celsius.
 - 2. Freeze-thaw conditions.
 - 3. Moisture conditions: Defined in individual equipment sections.
 - 4. Site elevation: Approximately 4100 feet above mean sea level.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01612

SEISMIC DESIGN CRITERIA

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Seismic design criteria for the following:
 - 1. Anchorage of mechanical and electrical equipment.
 - 2. Seismic design of tanks and anchorage of tanks.
 - 3. Other structures or items as specified or indicated on the Drawings.

- B. The project is located in a zone of moderate seismic activity. The Contractor is required to purchase and install equipment according to the applicable design code requirements for seismic design.

- C. References:
 - 1. International Building Code (IBC-2006 with City of Sedona amendments, including IBC Sections 1705 and 1707.
 - 2. American Society of Civil Engineers (ASCE 7-02), including (but not limited to) the following sections:
 - a. Ceiling Mounted Sprinkler Systems: 9.6.2.6.
 - b. Electrical Equipment for Emergency or Standby Power Systems: 9.6.3.14.
 - c. Attachments and Supports for Mechanical Equipment: 9.6.3.13.2.
 - d. Electrical Equipment, Attachments, and Supports: 9.6.3.14.
 - e. Tanks and Vessels: 9.14.7.3.
 - f. HVAC Ductwork: 9.6.3.10.
 - g. Piping Systems: 9.6.3.11.3 or 9.6.3.11.4.
 - 3. Section 01455, Table B5.

1.02 SYSTEM DESCRIPTION

- A. Design Requirements:
 - 1. Design in accordance with the requirements of the International Building Code, and the following, unless noted otherwise on structural Drawings:
 - a. Design Spectral Acceleration at Short Period, S_{DS} : 0.255.
 - b. Component Amplification Factor, a_p : In accordance with ASCE 7-02, "Minimum Design Loads for Buildings and Other Structures", Table 9.6.3.2.
 - c. Component Response Modification Factor, R_p : In accordance with ASCE 7-02, "Minimum Design Loads for Buildings and Other Structures", Table 9.6.3.2.
 - d. Component Importance Factor, I_p : 1.25, except $I_p = 1.50$ for sprinkler systems.
 - e. Seismic Design Category, B.
 - 2. Do not use friction to resist sliding due to seismic forces.
 - 3. Do not use more than 60 percent of the weight of the mechanical and electrical equipment for designing anchors for resisting overturning due to seismic forces.

4. Do not use more than 60 percent of the weight of the tank for resisting overturning due to seismic forces.
5. Use anchor bolts, bolts, or welded studs for anchors for resisting seismic forces. Anchor bolts used to resist seismic forces shall have a standard hex bolt head. Do not use anchor bolts fabricated from rod stock with an L or J shape.
6. Do not use chemical anchors, concrete anchors (unless undercut), flush shells, powder actuated fasteners, sleeve anchors, or other types of anchors unless indicated on the Drawings or accepted in writing by the Engineer.
7. Seismic forces must be resisted by direct bearing on the fasteners used to resist seismic forces. Do not use connections that use friction to resist seismic forces.
8. Maximum spacing for seismic supports for piping 4 inches or more in diameter shall be 10 feet maximum.
9. Maximum spacing for seismic supports for ducts more than 6 square feet in area shall be 10 feet maximum.
10. Seismic supports are required for ducts or piping that are suspended more than 1 foot beneath a floor slab, roof, or beam.

1.03 SUBMITTALS

- A. Shop Drawings and Calculations: Complete shop drawings and seismic calculations.
- B. Calculations shall be signed and stamped by a civil or structural engineer licensed to practice in Arizona.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01614

WIND DESIGN CRITERIA

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Wind design criteria.
- B. Related section:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01410 - Regulatory Requirements.

1.02 SYSTEM DESCRIPTION

- A. Design requirements:
 - 1. Building code criteria: Design for wind in accordance with building code as specified in Section 01410:
 - a. Occupancy category: III.
 - b. Basic wind speed: 90 miles per hour (service load).
 - c. Exposure category: C.
 - d. Topographic factor, K_{zt} : 1.0.
 - e. Wind importance factor, I_w : 1.15.
 - 2. Use anchor bolts, bolts, or welded studs for anchors for resisting wind forces. Anchor bolts used to resist wind forces shall have a standard hex bolt head. Do not use anchor bolts fabricated from rod stock with an L or J shape:
 - a. Do not use concrete anchors, sleeve anchors, flush shells, chemical anchors, powder actuated fasteners, or other types of anchor unless indicated on the Drawings or accepted in writing by the Engineer.
 - b. Wind forces must be resisted by direct bearing on the anchors used to resist wind forces. Do not use connections which use friction to resist wind forces.

1.03 SUBMITTALS

- A. Shop drawings and calculations: Complete shop drawings and wind design calculations.
- B. Calculations shall be signed and stamped by a civil or structural engineer licensed in the state where the Project is located.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01722

FIELD ENGINEERING

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Field engineering to establish lines and grades for the Work.
- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01770 - Closeout Procedures.

1.02 QUALITY ASSURANCE

- A. Qualifications of surveyor or Engineer: Registered civil engineer or land surveyor in state where Project is located.
- B. Accuracy of stakes, alignments, and grades may be checked randomly by Engineer:
 - 1. Notice of when checking will be conducted will be given.
 - 2. When notice of checking is given, postpone parts of the Work affected by stakes, alignments, or grades to be checked until checked.
 - 3. Do not assume that Engineer's check substitutes or complements required field quality control procedures.

1.03 CONSTRUCTION STAKES, LINES, AND GRADES

- A. Execute the Work in accordance with the lines and grades indicated.
- B. Make distances and measurements on horizontal planes, except elevations and structural dimensions.

1.04 SURVEY REFERENCE POINTS

- A. Basic reference line, a beginning point on basic reference line, and a benchmark will be provided by Owner.
- B. From these reference points, establish other control and reference points as required to properly lay out the Work.

- C. Locate and protect control points prior to starting site work, and preserve permanent reference points during construction:
 - 1. Make no changes or relocations without prior written notice.
 - 2. Replace Project control point, when lost or destroyed, in accordance with original survey control.

- D. Set monuments for principal control points and protect them from being disturbed and displaced:
 - 1. Re-establish disturbed monuments.
 - 2. When disturbed, postpone parts of the Work that are governed by disturbed monuments until such monuments are re-established.

1.05 PROJECT SURVEY REQUIREMENTS

- A. Establish minimum of 2 permanent benchmarks on site referenced to data established by survey control points.

- B. Record permanent benchmark locations with horizontal and vertical data on Project Record Documents.

- C. Assume responsibility for accuracy of stakes, alignments, and grades by performing verifications and checking in accordance with standard surveying practice.

1.06 RECORD DOCUMENTS

- A. Prepare and submit Record Documents as specified in General Conditions Section 15 and Section 01770.

- B. Maintain complete, accurate log of control points and survey.

- C. Affix civil engineer's or land surveyor's signature and registration number to record drawing to certify accuracy of information shown.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01732

CUTTING AND PATCHING

1.01 SUMMARY

- A. Section includes: Cutting and patching existing and new construction.
- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 01330 - Submittal Procedures.

1.02 SUBMITTALS

- A. Submit as specified in Section 01330.
- B. Cutting and patching plan:
 - 1. Submit details of proposed construction before cutting and patching construction commences affecting:
 - a. Work of Owner or of others.
 - b. Structural integrity of element of Project.
 - 2. Cutting and patching plan shall include the following:
 - a. Identification of Work.
 - b. Description of affected construction.
 - c. Necessity for cutting, patching, alteration, or excavation.
 - d. Description of proposed construction.
 - e. Scope of cutting, patching, alteration, or excavation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Comply with specifications and standards for products involved.

PART 3 EXECUTION

3.01 PREPARATION

- A. Provide adequate temporary support as necessary to ensure structural integrity of affected portion of Work.

- B. Provide devices and methods to protect other portions of Project from damage and persons from injury.
- C. Provide protection from elements for that portion of Project which may be exposed by cutting and patching, and maintain excavations free from water.

3.02 CUTTING AND PATCHING

- A. Cut, fit, and patch when required to:
 - 1. Make its several parts fit together properly.
 - 2. Remove and replace construction not conforming to Contract Documents.
 - 3. Remove samples of installed construction as specified for testing.
 - 4. Provide routine penetrations of nonstructural surfaces for installation of piping and electrical conduit.
- B. Execute cutting and demolition by methods which will prevent damage and will provide proper surfaces to receive installation of repairs.
- C. Openings in existing concrete and masonry:
 - 1. Create openings by:
 - a. Saw cutting completely through concrete or masonry.
 - b. Scoring edges of opening with saw to at least 1-inch depth on both surfaces (when accessible) and removing concrete or masonry by chipping.
 - 2. Do not allow saw cuts to extend beyond limits of opening.
 - 3. Make corners square and true by combination of core drilling and grinding or chipping.
 - 4. Prevent debris from falling into adjacent tanks or channels in service or from damaging existing equipment and other facilities.
- D. Sizing of openings in existing concrete or masonry:
 - 1. Make openings sufficiently large to permit final alignment of pipe and fittings without deflections.
 - 2. Allow adequate space for packing around pipes and conduit to ensure watertightness.
- E. Grouting pipes in place:
 - 1. Sandblast concrete surfaces and thoroughly clean sand and other foreign material from surfaces prior to placing grout.
 - 2. Grout pipes, sleeves, castings, and conduits in place by pouring grout under a head of at least 4 inches. Vibrate grout into place. Completely fill the spaces occupied by pipes, sleeves, castings, and conduits.
 - 3. Water cure the grout.
- F. Connections to existing pipes:
 - 1. Cut existing pipe square.
 - 2. Properly prepare the ends for the connection.
 - 3. Repair any damage to existing lining and coating.

- G. Rehabilitate all areas affected by removal of existing equipment, equipment pads and bases, piping, supports, electrical panels, electric devices, and conduits such that little or no evidence of the previous installation remains:
 - 1. Fill areas in existing floors, walls, and ceilings from removed piping, conduit and fasteners with non-shrink grout and finish smooth.
 - 2. Remove concrete bases for equipment and supports by:
 - a. Saw cutting clean, straight lines with a depth equal to the concrete cover over reinforcement minus 1/2 inch below finished surface. Do not cut existing reinforcement on floors.
 - b. Chip concrete within scored lines and cut exposed reinforcing steel and anchor bolts.
 - c. Patch with non-shrink grout to match adjacent grade and finish.
 - 3. Terminate abandoned piping and conduits with blind flanges, caps, or plugs.

- H. Treat existing concrete reinforcement as follows:
 - 1. Where existing reinforcement is to remain, protect, clean, and extend into new concrete.
 - 2. Where existing reinforcement is not to be retained, cut off as follows:
 - a. Where new concrete joins existing concrete at the removal line, cut reinforcement flush with concrete surface at the removal line.
 - b. Where concrete surface at the removal line is the finished surface, cut reinforcement 2 inches below the surface, paint ends with epoxy, and patch holes with dry pack mortar.

END OF SECTION

SECTION 01734

WORK WITHIN PUBLIC RIGHT-OF-WAY

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Requirements for maintenance, support, protection, relocation, reconstruction and adjusting-to-grade, restoration, construction of temporary and new facilities, and abandonment of existing utilities affected by construction work within the public right-of-way.

1.02 DEFINITIONS

- A. Utility: For purpose of this Section, utility means any public or private service, such as electric light and power systems; gas distribution systems; telephone, telegraph, cable television and other communication services; water distribution; storm drain and sanitary sewer services; police and fire communication systems; street lighting and traffic signs and signals; parking meters; and steam distribution systems.
- B. Trenching:
 - 1. Open trench:
 - a. General: Includes excavation, pipe laying, backfilling, and pavement replacement.
 - 2. Any excavated areas shall be considered as "open trench" until all pavement replacement has been made, or until all trenches outside of pavement replacement areas have been backfilled and compacted in accordance with these Contract Documents.

1.03 DESIGN REQUIREMENTS

- A. Trenching:
 - 1. Except where otherwise specified, indicated on the Drawings, or accepted in writing by the Engineer, the maximum length of open trench, where construction is in any stage of completion, shall not exceed the linear footage as set forth below. Descriptions under following area designations are general in nature and may be amended in writing by the Engineer due to particular or peculiar field conditions:
 - a. Business District Areas maximum 100 linear feet: Store front areas.
 - b. Commercial Areas maximum 400 linear feet: Industrial, shopping centers, churches, schools, hotels, motels, markets, gas stations, government and private office buildings, hospitals, fire and police stations, and nursing homes.
 - c. Residential Areas maximum 1 Block or 600 linear feet, whichever is the least: Single and multi-family residences, apartments, and condominiums.
 - d. Undeveloped Areas maximum 1,000 linear feet: Parks, golf courses, farms, undeveloped subdivided land.
 - 2. Completely backfill trenches across streets and install temporary or permanent pavement as soon as possible after pipe laying.

- B. Site conditions:
1. Use substantial steel plates with adequate trench bracing to bridge across trenches at street and alley crossings, commercial driveways, and residential driveways where trench backfill and temporary patch have not been completed during regular working hours.
 2. Provide safe and convenient passage for pedestrians.
 3. Maintain access to fire stations, fire hydrant, and hospitals at all times.
 4. Provide traffic control devices, barricades, and signage as required by the regulating agency.

1.04 SUBMITTALS

- A. Traffic control plan: Submit detailed traffic control plan for acceptance by jurisdictional agency.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01756

TESTING, TRAINING, AND FACILITY START-UP

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Requirements for equipment and system testing and facility start-up, including the following:
 - 1. Start-up plan.
 - 2. Performance testing.
 - 3. General start-up and testing procedures.
 - 4. Functional testing.
 - 5. Operational testing.
 - 6. Certificate of proper installation.
 - 7. Services of manufacturer's representatives.
 - 8. Training of Owner's personnel.

- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
 - 3. The following Sections are related to the Work described in this Section. This list of Related Sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the Contractor to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 15050 - Common Work Results for Mechanical Equipment.
 - b. Section 15954 - HVAC Systems Testing, Adjusting, and Balancing.
 - c. Section 15958 - Mechanical Equipment Testing.
 - d. Section 16950 - Field Electrical Acceptance Tests.
 - e. Section 17950 - Testing, Calibration, and Commissioning.

1.02 GENERAL TESTING, TRAINING, AND START-UP REQUIREMENTS

- A. Contract requirements: Testing, training, and start-up are requisite to the satisfactory completion of the Contract.

- B. Complete testing, training, and start-up within the Contract Times.

- C. Allow realistic durations in the Progress Schedule for testing, training, and start-up activities.

- D. Furnish labor, power, chemicals, tools, equipment, instruments, and services required for and incidental to completing functional testing, performance testing, and operational testing.

- E. Provide competent, experienced technical representatives of equipment manufacturers for assembly, installation and testing guidance, and operator training.

1.03 START-UP PLAN

- A. Submit start-up plan for each piece of equipment and each system not less than 3 weeks prior to planned initial start-up of equipment or system.
- B. Provide detailed sub-network of Progress Schedule with the following activities identified:
 - 1. Manufacturer's services.
 - 2. Installation certifications.
 - 3. Operator training.
 - 4. Submission of Operation and Maintenance Manual.
 - 5. Functional testing.
 - 6. Performance testing.
 - 7. Operational testing.
- C. Provide testing plan with test logs for each item of equipment and each system when specified. Include testing of alarms, control circuits, capacities, speeds, flows, pressures, vibrations, sound levels, and other parameters.
- D. Provide summary of shutdown requirements for existing systems that are necessary to complete start-up of new equipment and systems.
- E. Revise and update start-up plan based upon review comments, actual progress, or to accommodate changes in the sequence of activities.

1.04 PERFORMANCE TESTING

- A. Test equipment for proper performance at point of manufacture or assembly when specified.
- B. When source quality control testing is specified:
 - 1. Demonstrate equipment meets specified performance requirements.
 - 2. Provide certified copies of test results.
 - 3. Do not ship equipment until certified copies have received written acceptance from Engineer. Written acceptance does not constitute final acceptance.
 - 4. Perform testing as specified in the equipment sections.

1.05 GENERAL START-UP AND TESTING PROCEDURES

- A. Mechanical systems: As specified in the individual equipment Sections and Sections 15050, 15954, and 15958:
 - 1. Remove rust preventatives and oils applied to protect equipment during construction.
 - 2. Flush lubrication systems and dispose of flushing oils. Recharge lubrication system with lubricant recommended by manufacturer.
 - 3. Flush fuel system and provide fuel for testing and start-up.
 - 4. Install and adjust packing, mechanical seals, O-rings, and other seals. Replace defective seals.
 - 5. Remove temporary supports, bracing, or other foreign objects installed to prevent damage during shipment, storage, and erection.
 - 6. Check rotating machinery for correct direction of rotation and for freedom of moving parts before connecting driver.
 - 7. Perform cold alignment and hot alignment to manufacturer's tolerances.

8. Adjust V-belt tension and variable pitch sheaves.
 9. Inspect hand and motorized valves for proper adjustment. Tighten packing glands to insure no leakage, but permit valve stems to rotate without galling. Verify valve seats are positioned for proper flow direction.
 10. Tighten leaking flanges or replace flange gasket. Inspect screwed joints for leakage.
 11. Install gratings, safety chains, handrails, shaft guards, and sidewalks prior to operational testing.
- B. Electrical systems: As specified in Section 16950 and the individual equipment Sections:
1. Perform insulation resistance tests on all conductors except conductors for 120 V lighting and conductors for control signals that are completely internal to electrical panels.
 2. Perform continuity tests on grounding systems.
 3. Test and set switchgear and circuit breaker relays for proper operation.
 4. Perform direct current high potential tests on all cables that will operate at more than 2,000 volts. Obtain services of independent testing lab to perform tests.
 5. Check motors for actual full load amperage draw. Compare to nameplate value.
- C. Instrumentation systems: As specified in Section 17950 and the individual equipment Sections:
1. Bench or field calibrate instruments and make required adjustments and control point settings.
 2. Leak test pneumatic controls and instrument air piping.
 3. Energize transmitting and control signal systems, verify proper operation, ranges, and settings.

1.06 FUNCTIONAL TESTING

- A. Perform checkout and performance testing as specified in the individual equipment Sections.
- B. Functionally test mechanical and electrical equipment, and instrumentation and controls systems for proper operation after general start-up and testing tasks have been completed.
- C. Demonstrate proper rotation, alignment, speed, flow, pressure, vibration, sound level, adjustments, and calibration. Perform initial checks in the presence of and with the assistance of the manufacturer's representative.
- D. Demonstrate proper operation of each instrument loop function including alarms, local and remote controls, instrumentation, and other equipment functions. Generate signals with test equipment to simulate operating conditions in each control mode.
- E. Conduct continuous 8-hour test under full load conditions. Replace parts that operate improperly.

1.07 OPERATIONAL TESTING

- A. After completion of operator training, conduct operational test of the entire facility. Demonstrate satisfactory operation of equipment and systems in actual operation.
- B. Conduct operational test for continuous 7-day period.
- C. Owner will provide operations personnel, power, fuel, and other consumables for duration of test.
- D. Immediately correct defects in material, workmanship, or equipment that became evident during operational test.
- E. Repeat operational test when malfunctions or deficiencies cause shutdown or partial operation of the facility or results in performance that is less than specified.

1.08 CERTIFICATE OF PROPER INSTALLATION

- A. At completion of Functional Testing, furnish written report prepared and signed by manufacturer's authorized representative, certifying equipment:
 - 1. Has been properly installed, adjusted, aligned, and lubricated.
 - 2. Is free of any stresses imposed by connecting piping or anchor bolts.
 - 3. Is suitable for satisfactory full-time operation under full load conditions.
 - 4. Operates within the allowable limits for vibration.
 - 5. Controls, protective devices, instrumentation, and control panels furnished as part of the equipment package are properly installed, calibrated, and functioning.
 - 6. Control logic for start-up, shutdown, sequencing, interlocks, and emergency shutdown have been tested and are properly functioning.
- B. Furnish written report prepared and signed by the electrical and/or instrumentation subcontractor certifying:
 - 1. Motor control logic that resides in motor control centers, control panels, and circuit boards furnished by the electrical and/or instrumentation subcontractor has been calibrated and tested and is properly operating.
 - 2. Control logic for equipment start-up, shutdown, sequencing, interlocks, and emergency shutdown has been tested and is properly operating.
 - 3. Co-sign the reports along with the manufacturer's representative and subcontractors.

1.09 TRAINING OF OWNER'S PERSONNEL

- A. Provide operations and maintenance training for items of mechanical, electrical, and instrumentation equipment. Utilize manufacturer's representatives to conduct training sessions.
- B. Coordinate training sessions to prevent overlapping sessions. Arrange sessions so that individual operators and maintenance technicians do not attend more than 2 sessions per week.
- C. Provide Operation and Maintenance Manual for specific pieces of equipment or systems 1 month prior to training session for that piece of equipment or system.

- D. Satisfactorily complete functional testing before beginning operator training.
- E. Provide training sessions for day and swing shifts at time agreed upon by Owner. Pooling of shifts will not be permitted unless accepted by Owner.
- F. Training sessions: Provide training sessions for equipment as specified in the individual equipment Sections and as specified below.

Section Number	Section title/Equipment	O&M Manual Required	Minimum Number of Days for Actual Training
NA	Sodium Hypochlorite On-Site Generation System	X	3
NA	Cartridge Filters	X	0.5
11313L	Vertical Turbine Deep Well Pump	X	1
11312D	Vertical Turbine Short Setting Pump		1
13447	Electric Motorized Actuators	X	0.5
Various	All Valves	X	-
15120	Piping Specialties: Pressure Gauges Thermometers	X X	- -
15732	Air Conditioning Units	X	-
16222	Low Voltage Motors Up to 500 Horsepower	X	-
16262	Variable Frequency Drives 0.50 - 50 Horsepower	X	1
16264	Variable Frequency Drives 60 - 500 Horsepower	X	1
16444	Low Voltage Motor Control Centers	X	1
16445	Panelboards	X	1
16500	Lighting	X	-
Varies	All Process Control and Instrumentation Systems	X	2

- G. The Contractor shall videotape all training sessions and provide a copy for the Owner.
- H. The Contractor shall designate and provide 1 or more persons to be responsible for coordinating and expediting his/her training duties. The person or persons so designated shall be present at all training coordination meetings with the Owner.
- I. The Contractor's coordinator shall coordinate the training periods with Owner personnel and manufacturer's representatives, and shall submit a training schedule for each piece of equipment or system for which training is to be provided. Such training schedule shall be submitted not less than 21 calendar days prior to the time

that the associated training is to be provided and shall be based on the current plan of operation.

1.10 RECORD KEEPING

- A. Maintain and submit following records generated during start-up and testing phase of Project:
1. Daily logs of equipment testing identifying all tests conducted and outcome.
 2. Logs of time spent by manufacturer's representatives performing services on the job site.
 3. Equipment lubrication records.
 4. Electrical phase, voltage, and amperage measurements.
 5. Insulation resistance measurements.
 6. Data sheets of control loop testing including testing and calibration of instrumentation devices and setpoints.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01757

CLEANING AND DISINFECTION

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Cleaning and disinfection requirements for new and existing facilities affected by the Work.

1.02 REFERENCES

- A. American Water Works Association (AWWA):
 1. C651 - Disinfecting Water Mains.
 2. C652 - Disinfection of Water Storage Facilities.
 3. C653 - Disinfection of Water Treatment Plants.
- B. U.S. Environmental Protection Agency (EPA):
 1. Method 524.2 Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry.
 2. Safe Drinking Water Act (SDWA).

1.03 SUBMITTALS

- A. Submit disinfection test plan which details procedure to be utilized to disinfect the facilities including:
 1. Method and locations of disinfectant application.
 2. Locations of sampling points.
 3. Method of flushing and location of flushing ports (as appropriate for method of chlorination).
 4. Method of dechlorination (as appropriate for method of chlorination).
 5. Disposal location for chlorinated water (as appropriate for method of chlorination).
- B. Submit disinfection reports and include the following:
 1. Date issued.
 2. Project name and location.
 3. Treatment subcontractor's name, address, and phone number.
 4. Type and form of disinfectant used.
 5. Time and date of disinfectant injection start.
 6. Time and date of disinfectant injection completion.
 7. Test locations.
 8. Initial and 24-hour disinfectant residuals in milligrams per liter for each outlet tested.
 9. Time and date of flushing start.
 10. Time and date of flushing completion.
 11. Disinfectant residual after flushing in milligrams per liter for each outlet tested.
- C. Submit bacteriological reports and include the following:
 1. Date issued.

2. Project name and location.
3. Laboratory's name, certification number, address, and phone number.
4. Time and date of water sample collection.
5. Name of person collecting samples.
6. Test locations.
7. Time and date of laboratory test start.
8. Coliform bacteria test results for each outlet tested.
9. Certification that water conforms or fails to conform to bacterial standards of this specification.
10. Bacteriologist's signature and bacteriological laboratory's evidence of certification.

1.04 QUALITY ASSURANCE

- A. Bacteriological and physical chemistry laboratory: Certified by state in which Project is located.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect chlorine and bacteriological samples against damage and contamination.
- B. Maintain caution labels on hazardous materials.
- C. Maintain storage room dry and with temperatures as uniform as possible between 60 degrees Fahrenheit and 80 degrees Fahrenheit.

1.06 PROTECTION

- A. Provide necessary signs, barricades, and notices to prevent persons from accidentally consuming water or disturbing system being treated.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Disinfectant: Free chlorine in liquid, powder, tablet, or gas form in accordance with AWWA C653.
- B. Dechlorination agent: Sulfur dioxide, sodium bisulfate, sodium sulfite, or sodium thiosulfite in accordance with AWWA C653.

PART 3 EXECUTION

3.01 PRELIMINARY CLEANING

- A. Complete hydrostatic/leakage tests prior to disinfection.
- B. Clean all newly constructed and/or modified facilities, including filters and conveyance facilities, such as pipes and channels at the plant, in accordance with AWWA C653 and the following:

1. Remove all debris and material not associated with the structure or process prior to disinfection.
 2. Clean all wall, floor, ceiling, and attached surfaces by use of high-pressure water jet, sweeping, scrubbing, or equally effective means.
 3. Remove all water, paint flakes, sediment, dirt, and foreign material accumulated during cleaning.
 4. Remove by flushing or other means, soil and debris from water pipes and channels in accordance with AWWA C651.
 5. Protect surfaces from adverse environmental exposure between the preliminary cleaning and the disinfection stages.
- C. Prior to chlorination, clean all newly constructed and/or modified facilities to be disinfected in accordance with AWWA C651, C652, or C653, as applicable.

3.02 SURFACES TO BE DISINFECTED

- A. Cartridge filters
- B. All existing irrigation piping used to convey water to injection wells and convey flush water.

3.03 DISINFECTION OF WATER LINES

- A. Cleaning:
 1. Remove by flushing or other means, soil and debris from the water tanks in accordance with AWWA C652 prior to chlorination.
- B. Inspection:
 1. Verify that water system is completed and cleaned of soil and debris prior to chlorination.
 2. Start disinfection when conditions are satisfactory.
- C. System treatment:
 1. Perform disinfection of water lines and structures in accordance with AWWA C651, C652, and C653, and as modified in this Section.
 2. Mix chlorine solution for use in disinfection of existing pipeline in Injection Well Supply Pump Station wetwell. Limit volume to what is required to disinfect pipeline.
 3. Maintain minimum of 10 mg/L free chlorine residual for 24 hours.
 4. In presence of Owner's inspector, sample water at approved locations throughout system to confirm chlorine residual target is met. If residual is less than 10 mg/L at any location, disinfection must be repeated.

3.04 REPAIRS OR CONNECTIONS TO EXISTING LINES

- A. Clean and sterilize the interior surfaces of new piping, fittings, equipment, and appurtenances to be installed.
- B. Clean and sterilize the existing pipe or facilities for a minimum distance of 3 pipe diameters back from the ends of the pipe. Plug the ends of the line when work is not being performed on the pipe.
- C. Perform sterilization by swabbing each item with a concentrated chlorine solution.

1. Each piece is to be disinfected prior to being assembled for installation in the existing pipe.
2. Disinfect each piece just prior to assembly to help prevent recontamination.
3. Plug the ends of the assembly until a new item is to be added to the assembly.
4. Store disinfected materials on blocks to prevent contact with the ground.

3.05 FLUSHING

- A. Collect flush water in tank for disposal in accordance with this specification.
- B. Flush facilities until flush water contains no more than 1 mg/L of chlorine residual.

3.06 DISPOSAL OF CHLORINATED WATER

- A. Dispose of chlorinated water in accordance with the submitted disinfection test plan and applicable requirements of federal, state, county, and city having jurisdiction over disposal of hazardous wastes in location of the Project and disposal site.
- B. Chlorinated water may only be disposed of in a sanitary sewer system with the written permission of the Owner. If allowed, discharge the chlorinated water at a low rate so it does not surcharge the sewer line.
- C. Water may be disposed into a sanitary sewer under the following conditions:
 - a. Disposal location is approved by Owner
 - b. Rate of discharge is no more than 10:1 (sanitary sewer flow: chlorinated water used for disinfection)
 - c. Residual chlorine concentration is no greater than 10 mg/L.

3.07 BACTERIOLOGICAL TEST

- A. Instruct bacteriological laboratory to collect water samples no sooner than 24 hours after start of disinfection of each facility.
- B. A minimum of 24 hours after flushing system, collect bacteriological quality samples at each of following locations and other locations in accordance with the submitted disinfection test plan and Standard Methods for the Examination of Water and Wastewater:
 1. Where water enters system.
 2. Ends of piping runs.
- C. Analyze water samples in accordance with Standard Methods for Examination of Water and Wastewater.
- D. Test results must meet the following quality criteria, corresponding to Arizona Class A+ reclaimed water.
 1. Fecal coliform: non-detect (For CFU, a value of <1.0 shall be considered to be non-detect. For MPN, a value of <2.2 shall be considered to be non-detect).
- E. When bacteriological test proves water quality to be unacceptable, repeat disinfection treatment process until water meets quality standards for disinfection.

END OF SECTION

SECTION 01770

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. This Section is supplemental to the General Conditions of this contract, Item Nos. 15 and 35. Section includes: Contract closeout requirements including:
 - 1. Final cleaning.
 - 2. Waste disposal.
 - 3. Touch-up and repair.
 - 4. Disinfection of systems.
 - 5. Preparation and submittal of closeout documents.
 - 6. Final completion certification.

1.02 FINAL CLEANING

- A. Perform final cleaning prior to inspections for final acceptance.
- B. Employ skilled workers who are experienced in cleaning operations.
- C. Use cleaning materials which are recommended by manufacturers of surfaces to be cleaned.
- D. Prevent scratching, discoloring, and otherwise damaging surfaces being cleaned.
- E. Broom clean exterior paved surfaces and rake clean other surfaces of site work:
 - 1. Police yards and grounds to keep clean.
- F. Remove dust, cobwebs, and traces of insects and dirt.
- G. Clean grease, mastic, adhesives, dust, dirt, stains, fingerprints, paint, blemishes, sealants, plaster, concrete, and other foreign materials from sight-exposed surfaces, and fixtures and equipment.
- H. Remove non-permanent protection and labels.

1.03 WASTE DISPOSAL

- A. Arrange for and dispose of surplus materials, waste products, and debris off-site:
 - 1. Prior to making disposal on private property, obtain written permission from Owner of such property.
- B. Do not fill ditches, washes, or drainage ways which may create drainage problems.
- C. Do not create unsightly or unsanitary nuisances during disposal operations.
- D. Maintain disposal site in safe condition and good appearance.

- E. Complete leveling and cleanup prior to final acceptance of the Work.

1.04 TOUCH-UP AND REPAIR

- A. Touch-up or repair finished surfaces on structures, equipment, fixtures, and installations that have been damaged prior to inspection for final acceptance.
- B. Refinish or replace entire surfaces which cannot be touched-up or repaired satisfactorily.

1.05 FINAL CLEANING AND STERILIZATION OF SYSTEMS OF PLANT FACILITIES

- A. Clean channels, pipe, basins, reservoirs, and tanks before running of 7-day test, or before facility goes on stream when 7-day test is not required.
- B. Wash, wherever practicable, or broom sweep channels, pipe, basins, reservoirs, and tanks.

1.06 CLOSEOUT DOCUMENTS

- A. Submit following Closeout Submittals upon completion of the Work and at least 7 days prior to submitting Application for Final Payment:
 - 1. Evidence of Compliance with Requirements of Governing Authorities.
 - 2. Project Record Documents.
 - 3. Operation and Maintenance Manuals.
 - 4. Warranties and Bonds.
 - 5. Evidence of Payment and Release of Liens as outlined in Conditions of the Contract.
 - 6. Release of claims as outlined in Conditions of the Contract.
 - 7. Survey Record Documents.
 - 8. Certificate of Final Completion.

1.07 PROJECT RECORD DOCUMENTS

- A. Maintain at Project site, available to Owner and Engineer, 1 copy of the Contract Documents, shop drawings and other submittals, in good order:
 - 1. Mark and record field changes and detailed information contained in submittals and change orders.
 - 2. Record actual depths, horizontal and vertical location of underground pipes, duct banks and other buried utilities. Reference dimensions to permanent surface features.
 - 3. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
 - 4. Identify location of spare conduits including beginning, ending and routing through pull boxes, and manholes. Record spare conductors, including number and size, within spare conduits, and filled conduits.
 - 5. Provide schedules, lists, layout drawings, and wiring diagrams.

6. Make annotations with erasable colored pencil conforming to the following color code:

Additions:	Red
Deletions:	Green
Comments:	Blue
Dimensions:	Graphite

7. ENGINEER will produce electronic record drawing set from CONTRACTOR'S annotations. Coordinate with ENGINEER as needed to clarify annotations.

- B. Maintain documents separate from those used for construction:

1. Label documents "RECORD DOCUMENTS."

- C. Keep documents current:

1. Record required information at the time the material and equipment is installed and before permanently concealing.

- D. Deliver record documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.

- E. During progress meetings, record documents will be reviewed to ascertain that changes have been recorded.

1.08 WARRANTIES AND BONDS

- A. Provide executed Warranty or Guaranty Form if required by Contract Documents.

- B. Provide specified additional warranties, guarantees, and bonds from manufacturers and suppliers.

1.09 CERTIFICATE OF FINAL COMPLETION

- A. When 7-day operational test has been successfully completed, Engineer will certify that new facilities are operationally complete. Engineer will submit a list of known items (punch list) still to be completed or corrected prior to contract completion.

- B. List of items to be completed or corrected will be amended as items are resolved by Contractor.

- C. When all items have been completed or corrected, submit written certification that the entire work is complete in accordance with the Contract Documents and request final inspection.

- D. Upon completion of final inspection, Engineer will either prepare a written acceptance of the entire work or advise Contractor of work not complete. If necessary, inspection procedures will be repeated.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01782

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Preparation and submittal of operation and maintenance manuals.

1.02 SUBMITTALS

- A. Submit operation and maintenance manuals before field quality control testing and before training of each piece of equipment or system.
- B. Submit preliminary copies of O&M manuals in accordance with General Condition Item No. 25.
- C. Make additions and revisions to the manuals in accordance with ENGINEER's review comments.
- D. Submit 3 hard copies and 1 electronic copy of approved final manuals for each piece of equipment or system.
- E. Make manuals available at project site for use by construction personnel and ENGINEER.

1.03 OPERATION AND MAINTENANCE MANUALS

- A. Preparation:
 - 1. Provide operations and maintenance manuals in 3-ring binders with rigid covers. Utilize tab sheets to organize information.
 - 2. Provide scanned copy of manual in PDF format with table of sections electronically bookmarked and text searchable.
- B. Contents of operation and maintenance manuals:
 - 1. Cover page: Equipment name, equipment tag number, project name, OWNER's name, appropriate date.
 - 2. Table of contents: General description of information provided within each tab section.
 - 3. Equipment description and approved shop drawings submittal, with design criteria and parameters clearly identified.
 - 4. Lubrication information: Required lubricants and lubrication schedules.
 - 5. Control diagrams:
 - a. Internal and connection wiring, including logic diagrams, wiring diagrams for control panels, ladder logic for computer based systems, and connections between existing systems and new additions, and adjustments such as calibrations and set points for relays, and control or alarm contact settings.
 - 6. Start-up procedures: Recommendations for installation, adjustment, calibration, and troubleshooting.

7. Operating procedures:
 - a. Step-by-step procedures for starting, operating, and stopping equipment under specified modes of operation.
 - b. Include safety precautions and emergency operating shutdown instructions.
 8. Preventative maintenance procedures: Recommended steps and schedules for maintaining equipment.
 9. Overhaul instructions: Directions for disassembly, inspection, repair and reassembly of the equipment; safety precautions; and recommended tolerances, critical bolt torques, and special tools that are required.
 10. Parts list: Generic title and identification number of each component part of equipment; include bearing manufacturer, model and ball or roller pass frequencies for every bearing.
 11. Spare parts list: Recommended number of parts to be stored at the site and special storage precautions.
 12. Drawings: Exploded view or plan and section views with detailed callouts.
 13. Provide electrical and instrumentation schematic record drawings.
 14. Source (factory) quality control test Results: Provide copies of factory test reports as specified in Sections 15958 or the equipment section.
 15. Field quality control test results: After field-testing is completed, insert field test reports as specified in Sections 15958 or the equipment section.
 16. Equipment summary form: Completed form in the format attached at the end of this Section. Insert Equipment Summary Form after the tab sheet of each equipment section. The manufacturer's standard form will not be acceptable.
- C. Electronic operation and maintenance manuals:
1. Electronic manuals shall be in Adobe Acrobat's Portable Document Format (PDF), and shall be prepared at a resolution between 300 and 600 dots per inch (dpi), depending on document type. Optical Character Recognition (OCR) capture shall be performed on these documents. OCR settings shall be performed with the "original image with hidden text" option in Adobe Acrobat Exchange.
 2. Full size shall be limited to 10 MB. When multiple files are required, the least number of files possible shall be created. File names shall be in the format OMXXXXX-Y-V.pdf, where XXXXX is the five digit number corresponding to the specification section, Y is the equipment description matching that used for the equipment specification in the Construction Documents, and V is a number used only when more than one 10 MB file is required for an O&M manual.
 3. Documents prepared in PDF format shall be processed as follows:
 - a. Pages shall be searchable (processed for optical character recognition) and indexed when multiple files are required.
 - b. Pages shall be rotated for viewing in proper orientation.
 - c. A bookmark shall be provided in the navigation frame for each entry in the Table of Contents.
 - d. Embedded thumbnails shall be generated for each completed PDF file.
 - e. The opening view for PDF files shall be as follows:
 - 1) Initial View: Bookmarks and Page.
 - 2) Page Number: Title Page (usually Page 1).
 - 3) Magnification: Set to Fit in Window.
 - 4) Page: Single Page.
 - f. Where the bookmark structure is longer than one page, the bookmarks shall be collapsed to show the chapter headings only.

- g. When multiple files are required, the first file of the series (the parent file) shall list every major topic in the Table of Contents. The parent file shall also include minor headings bookmarked based on the Table of Contents. Major headings, whose content is contained in subsequent files (children) shall be linked to be called from the parent to the specific location in the child file. The child file shall contain bookmark entries for both major and minor headings contained in the child file. The first bookmark of any child file shall link back to the parent file and shall read as follows “Return to the *Equipment Name* Table of Contents”, e.g. Return to the Polymer Feed System Table of Contents.
- h. Drawings shall be bookmarked individually.
- i. Files shall be delivered without security settings to permit editing, insertion and deletion of material to update the manual provided by the manufacturer.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

EQUIPMENT SUMMARY FORM

1. EQUIPMENT ITEM _____
2. MANUFACTURER _____
3. EQUIPMENT IDENTIFICATION NUMBER(S) _____
(maps equipment number)
4. LOCATION OF EQUIPMENT _____
5. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS) _____

NAMEPLATE DATA -

- Horsepower _____
- Amperage _____
- Voltage _____
- Service Factor (S.F.) _____
- Speed _____
- ENC Type _____
- Capacity _____
- Other _____

7. MANUFACTURER'S LOCAL REPRESENTATIVE

- Name _____
- Address _____
- Telephone Number _____

8. MAINTENANCE REQUIREMENTS _____

9. LUBRICANT LIST _____

10. SPARE PARTS (recommendations) _____

11. COMMENTS _____