



CONTRACT DOCUMENTS
FOR
CITY OF SEDONA
PUBLIC WORKS DEPARTMENT

Ranger Station Park Improvements Project

2023-PR-03c

CITY OF SEDONA
PR-03c RANGER STATION PARK IMPROVEMENTS PROJECT

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ADVERTISEMENT FOR BIDS
City of Sedona
Public Works Department
108 Roadrunner Drive
Sedona, AZ 86336

Sealed bids for the construction of the **PR-03c Ranger Station Park Improvements Project** will be received by the Public Works Department, located at 108 Roadrunner Drive, Sedona, Arizona, until 2:00 P.M. local time, April 13, 2023. At that time, bids will be opened and documented. Bid results will be available upon request after opening.

PROJECT: PR-03c Ranger Station Park Improvements Project

DESCRIPTION: The City purchased the “Old Ranger Station” at 250 Brewer Road in 2014 and has developed a master plan for the site. This work is part of the master plan and includes a park with ADA accessible parking, grading and drainage work, stabilized decomposed granite trail, and a lawn play area.

CONTRACT TIME: 199 calendar days after the Notice to Proceed (200 including NTP).

LIQUIDATED DAMAGES: \$710 per day beyond the 200-calendar day Contract Duration.

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

Contract Documents may be downloaded from the City of Sedona’s website at <http://sedonaaz.gov/business/doing-business/bids-and-rfps>.

PRE-BID CONFERENCE: Pre-bid conference (mandatory) will be held on **March 22, 2023, at 2:00 pm. at the City of Sedona Public Works office, 221 Brewer Road. (Moriarty Conference Room).**

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 the award of the Contract, fails to enter into a Contract or fails to post payment and performance bonds satisfactory to the City ensuring 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
Public Works Department
108 Roadrunner Drive
Sedona, AZ 86336

U.S. MAIL: City of Sedona
Public Works Department
102 Roadrunner Drive
Sedona, AZ 86336

AND MARKED: Bid Proposal for PR-03c Ranger Station Park Improvements Project

AND RECEIVED: **At the Public Works Department until 2:00 P.M. local time, April 13, 2023**
(as determined by reference to www.time.gov ref [Arizona](http://www.time.gov) 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 based on 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 Johnathan Hoffman, Assistant Project Manager, 221 Brewer Road, Sedona, Arizona 86336, or email JHoffman@sedonaaz.gov.

First Advertisement: 3/8/2023

Second Advertisement: 3/15/2023

RED ROCK NEWS

By: 

J. Andy Dickey, P.E.
Assistant City Manager / Director of Public Works

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 NUMBERS where called for in the Bid Proposal.

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 (1) 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 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.

CONSTRUCTION CONTRACT

THIS CONTRACT, made and entered into this ____ day of _____, 2023 by and between the City of Sedona, Arizona, hereinafter called the "Owner", and **Click here to enter text.**, hereinafter called the "Contractor."

WITNESSETH:

WHEREAS, the City has caused Contract Documents to be prepared for the construction of the **PR-03c Ranger Station Park Improvements 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 the 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 and the Plans and Technical Specifications, and the Drawings numbered 1 through 29, 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, including a requirement that Contractor obtain an annual Sedona Business License for every year that they do business with Sedona or within the City limits.

6. The Contractor shall carry Workers' Compensation Insurance and require all Subcontractors to carry Workers' Compensation Insurance as required by the Law of the State of Arizona, and all other insurance as set forth in the General Conditions.
7. Contractor, its agents, employees, and subcontractors, shall not discriminate in any employment policy or practice. "Discrimination" means to exclude individuals from an opportunity or participation in any activity or to accord different or unequal treatment in the context of a similar situation to similarly situated individuals because of race, color, gender, gender identity, sexual orientation, religion, national origin or ancestry, marital status, familial status, age, disability, or veteran status. (Ordinance 2015-10 (2015)).
8. 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 on page A-2.
9. 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
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.

10. 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.
11. 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.
12. 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.
13. 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 which shall be deemed an original on the date first above written.

CITY: City of Sedona, Arizona

BY: _____

NAME: _____

TITLE: _____

(SEAL)

ATTEST:

BY: _____

NAME: _____

CONTRACTOR:

BY: _____

NAME: _____

TITLE: _____

(SEAL)

ATTEST:

BY: _____

NAME: _____

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

PR-03c Ranger Station Park Improvements 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 _____, 2023.

PRINCIPAL

Seal

By: _____

Title: _____

AGENCY OF RECORD

SURETY

Seal

AGENCY ADDRESS

(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 Cashier's Check payable to the order of the City of Sedona hereinafter referred to as "City," for **PR-03c Ranger Station Park Improvements 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 (2) 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 _____, 2023 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 _____, 2023.

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 _____, 2023, _____

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 _____, 2023.

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 **PR-03c Ranger Station Park Improvements 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 – Ranger Station Park Improvements Project
Project # PR-03c**

ITEM NO.	ITEM DESCRIPTION	QTY	UNIT	UNIT PRICE	EXTENDED TOTAL
	DEMOLITION				
1	Remove & Dispose existing Concrete	568	SF		
2	Remove & Dispose existing Rip Rap	87	SF		
3	Remove & Dispose existing Storm drainpipe	5	LF		
4	Remove & Dispose existing Headwall	12	LF		
	SUB TOTAL DEMOLITION				
	EARTHWORK				
5	Clearing & Grubbing	1	LS		
6	Excavation	1730	CY		
7	Embankment	1915	CY		
8	Import	185	CY		
	SUB TOTAL EARTHWORK				
	CONSTRUCTION IMPROVEMENTS				
9	Subgrade Prep	3762	SY		
10	Concrete Walking Path	191	SY		
11	Concrete Driveway Entrance	236	SY		
12	Concrete ADA Parking	176	SY		
13	ABC Parking Area	1938	SY		
14	Stabilized Decomposed Granite Trail	965	SY		
15	Protect Existing Tree In Place	35	EA		
16	Construct Seat Wall	217	LF		
17	Construct Gabion Seat Wall	96	LF		
18	1" PVC Water Line	208	LF		
19	1" Brass Ball Valve	1	EA		
20	2" Water Service Line and Meter	1	LS		
21	1 ½ "PVC Water Line	187	LF		
22	1 ½" PVC Water Valve	3	EA		
23	Valve Box (M.A.G. 391)	5	EA		
24	Backflow Prevention Device	2	EA		
25	4" PVC Sewer Line	92	LF		

26	Sewer Cleanout with Frame and Cover	1	EA		
27	12" CMP	30	LF		
28	18" CMP	49	LF		
29	18" Flared End Section	2	EA		
30	Rip Rap D50=4" (8" Thick)	19	SY		
31	3'x3'x3' Gabion Basket	12	EA		
32	18"x9'x15' Gabion Mattress	4	EA		
33	3'x3'x4.5' Gabion Basket	8	EA		
34	Strip & Sign ADA parking Spaces	1	LS		
35	Single Dumpster Enclosure	1	EA		
36	ADA Ramp with Handrails	2	EA		
37	Concrete Steps with Handrails	1	LS		
38	Removable Chain Barricade	2	EA		
39	Install Lockable Electrical Outlet	5	EA		
40	1" PVC Electrical Conduit	68	LF		
41	1 1/2" PVC Electrical Conduit	1073	LF		
	SUB TOTAL CONSTRUCTION IMPROVEMENTS				
	TOTAL CIVIL IMPROVEMENT COST				
	RESTROOM				
42	Restroom Building (through construction)	1	LS		
	SUB TOTAL RESTROOM				
	HARDSCAPE				
43	Red Drystack Retaining Wall	93	LF		
44	Sedona Red Concrete Steps	47	SF		
45	Sedona Red Concrete Landscape Curb	320	LF		
46	Stair and Ramp Railing	59	LF		
47	Metal Pipe Parking Stop	330	LF		
48	Fire Hose Parking Delineator	45	EA		
49	ADA Parking Lot Signage / Stripping Allowance	1	EA		
50	Chain Gate at Parking Lot Entry	2	EA		
51	Removable Bollard	4	EA		
52	Playground Equipment – Future by Owner	0	LS		
53	PIP Playground Surfacing – Future by Owner	0	SF		
54	Playground Drain System	0	LS		
	SUB TOTAL HARDSCAPE				
	SITE AMENITIES				
55	Lighting / Electrical Allowances	1	LS		
56	Parking Lot Lighting	4	EA		
57	Interpretive Sign Allowance	1	LS		
58	Park Sign	1	EA		

**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

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

(Continued)

Name of Business

By

Title

Subscribed and sworn to before me this _____ day of _____, 2023.

(Notary Public)

My Commission expires: _____

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' 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</u> <u>Amount</u>	<u>Class of</u> <u>Work</u>	<u>When</u> <u>Completed</u>	<u>Name, Address and</u> <u>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 grading and drainage/earthwork 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 grading and drainage/earthwork projects has your company, or the subcontractor 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 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 3 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, latest 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.

1. Project Sign

The Contractor shall install one project sign. The sign shall identify the project and the City of Sedona as the Project owner and provide a contact person for both the City and the Contractor. The sign shall be securely mounted and placed so that the bottom of the sign does not impede vehicular or pedestrian traffic flow or otherwise become a safety concern. The Contractor shall provide the project sign for the duration of the on-site work on the project. Payment of more than 75% of mobilization shall not be payable until the sign is in place. Failure to maintain the sign erect and in legible condition may result in up to a deduction from the contract payment equal to 0.25% for each time a written notice regarding improper sign maintenance is issued by the Engineer.

The required sign shall be mounted at a location within the project limits visible to the public as it enters or moves adjacent to the project area. The Contractor shall locate the sign in a location mutually agreeable to the Project Engineer and the Contractor within the project area. The sign shall be constructed per the Project Construction Sign Detail included at the end of the Special Conditions section. Compensation for this item shall be considered as included in the price for bid item "Mobilization". The Contractor shall present the sign design as a project submittal. The Percent Complete Bar shall be filled in as the project progresses in accordance with Article 6 of the General Conditions.

2. Public Convenience and Safety

Within the City of Sedona public convenience and safety are matters to which the Contractor is expected to devote attention at all times during the project. The Contractor shall minimize disruption of normal vehicular and pedestrian traffic patterns and routes, the disruption of normal

property services such as, but not limited to, mail delivery and garbage pick-up. Failure in making these provisions shall subject the Contractor to deductions from payments due under the contract as determined by the City Engineer.

3. Start of Construction

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

- A traffic control plan that has been approved by the City Engineer
- 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
- A minimum of 2 working days written notice delivered to property owners, residents, and HOA President within and 300 feet adjacent to the work area. The notice shall state the Contractor's contact information, brief description of the project, and the project's anticipated start date
- 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
- The Project Sign has been posted
- 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.

4. 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 surveys on the project **see Section 15 of the General Conditions.**

5. 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, sewer pipe, manholes, concrete mix design, asphalt mix design, metal fabrications, project sign, and equipment rental rates for all equipment to be utilized for the project (as required by Section 47.D.3 of the General Conditions).

6. 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 (or comport with City Code Sections...) 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, subcontractors, 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.

7. Permits

The Contractor shall be responsible for obtaining permits bearing on the work and adhere to provisions of said permits. The Contractor shall also adhere to requirements of Homeowner Associations or similar organizations when establishing equipment, storage, or other yards within subdivisions. Evidence of such adherence shall be provided in writing, if requested by the City.

8. 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.

9. 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.

The Contractor shall manage any upstream flows during construction to maintain continuous conveyance and historic flow patterns through the project area.

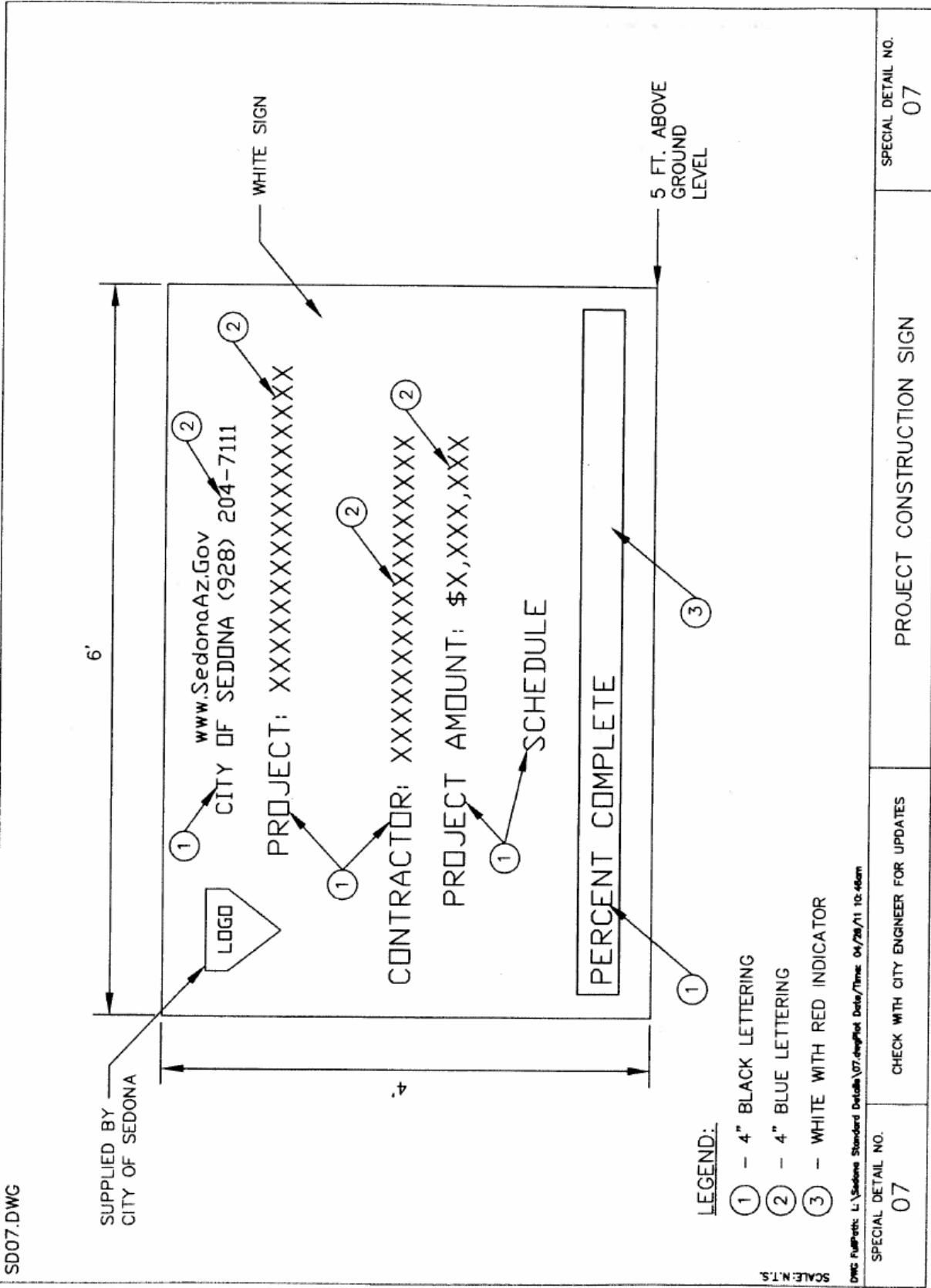
10. Required Inspection

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

11. Pre-Construction Video

The "Mobilization" bid item shall include acquiring high-resolution video to document pre-construction conditions of the entire project work area. The pre-construction video shall be submitted to the City of Sedona prior to mobilization occurring.

PROJECT SIGN TEMPLATE



CONTRACTOR'S APPLICATION AND CERTIFICATE FOR PAYMENT

CONTRACTOR: _____ OWNER: _____ PROJECT: _____ APPLICATION#: _____
 _____ INVOICE #: _____
 _____ PROJECT #: _____ INVOICE DATE: _____
 _____ PERIOD TO: _____

APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved previously	\$	\$
Total changes approved this month	\$	\$
TOTAL	\$	\$
NET CHANGES by Change Order	\$	\$

1. ORIGINAL CONTRACT SUM \$ _____
2. NET CHANGE BY CHANGE ORDERS \$ _____
3. CONTRACT SUM TO DATE (Line 1 +/- 2) \$ _____
4. TOTAL COMPLETED TO DATE \$ _____
(Column K on Continuation Sheet)
5. RETAINAGE OF COMPLETED WORK \$ _____
a. 10%
6. TOTAL EARNED LESS RETAINAGE \$ _____
(Line 4 less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$ _____
(Line 6 from prior Certificate)
8. CURRENT PAYMENT DUE \$ _____
9. BALANCE TO FINISH, PLUS RETAINAGE \$ _____
(Line 3 less Line 6)

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: _____ Date: _____
 By: _____ Date: _____

CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Owner's Representative certifies to the Owner that to the best of the Owner Representative's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the Amount Certified.

OWNER'S REPRESENTATIVE: _____ AMOUNT CERTIFIED: \$ _____

By: _____ Date: _____
 This Certificate is not negotiable. The Amount Certified is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

NOTICE OF AWARD

Date

Contractor Name.
Street or PO Box
City, State Zip

SUBJECT: NOTICE OF AWARD – SD-03 BACK O’ BEYOND LOW WATER CROSSING IMPROVMENTS PROJECT

The City of Sedona, having duly considered the bid submitted on _____, 2020 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:

CITY OF SEDONA, ARIZONA

Contractor

Sincerely,

By:

Name: _____

Date: _____

J. Andy Dickey, P.E.,
Assistant City Manager/Director of Public Works

Enclosures (3) contracts

JAD/clp

cc: City Manager

NOTICE TO PROCEED

Date

Contractor Name.

Street or PO Box

City, State Zip

Attention:

Subject: **NOTICE TO PROCEED - PR-03c RANGER STATION PARK IMPROVEMENTS PROJECT**

You are hereby authorized to proceed with work effective _____, 2023 and fully complete all work within _____ consecutive days from this date. The completion date for this Project is therefore _____, 2023. Liquidated damages of \$ **XXX** per day are applicable for each day past _____, 2020 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.

Director of Public Works/City Engineer

Date: _____

Receipt Acknowledged:

By: _____

Date: _____

**City of Sedona
Public Works Department
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: PR-03c Ranger Station Park Improvements 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:

CITY OF SEDONA – PUBLIC WORKS DEPARTMENT APPROVED

BY: _____

BY: _____

DATE: _____

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.



City of Sedona Public Works Department

102 Roadrunner Drive Sedona, AZ 86336
(928) 204-7111 • Fax: (928) 282-5348

PAST PERFORMANCE QUESTIONNAIRE

To: _____

Phone: _____

Email: _____

Subject: Past Performance Survey of: _____
Name of Company Being Surveyed

Name of Key Personnel

The City of Sedona collects past performance information (on firms and key personnel) to assist in procuring/awarding projects based on value. The firm/individual listed above is requesting reference for a past project they have completed. It would be greatly appreciated if you would take a few moments to complete the survey and return it to the City of Sedona.

Rate each of the criteria on a scale of 1 to 10, with 10 representing that you were very satisfied (and would hire the firm/individual again) and 1 representing that you were very unsatisfied (and would never hire the firm/individual again). Please rate each of the criteria to the best of your knowledge. If you do not have sufficient knowledge of past performance in a particular area, please leave it blank.

Client Name: _____ Date Completed: _____

Project Name: _____

No.	CRITERIA	UNIT	RATING
1	Ability to meet customer expectations for quality of work performed	(1-10)	
2	Ability to manage costs	(1-10)	
3	Ability to maintain project schedule	(1-10)	
4	Comfort level in hiring the firm / individual again	(1-10)	
5	Leadership ability of personnel assigned to the project	(1-10)	
6	Ability to Communicate Effectively	(1-10)	

Printed Name of Evaluator

Signature of Evaluator

Thank you for your time and effort in assisting the City of Sedona in this important endeavor.

Please email or mail the completed survey (must be received by 2:00 p.m. on April 13, 2023) to:

JHoffman@sedonaAZ.gov or

Attn: John Hoffman

City of Sedona, Public Works Department
102 Roadrunner Drive, Sedona, AZ 86336

General Conditions

2023

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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 any replacements 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 through Thursday, unless otherwise stated in the specifications. Friday work is permitted between 7:00 AM and 5:30 PM for work that does not require City inspection. This work hours timeframe 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-Builts and Record As-Builts 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 2022, 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 “Arizona 811” (1-800-782-5348) (formerly Arizona Blue Stake Center) 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 timeframe 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 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 filing 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 timeframe shall be twenty (20) working days. This timeframe 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 01/09/22 for calendar year 2022, 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 34-2211.

- 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 10-hour day, he may elect to with

prior coordination with the City. Any inspection, which is required beyond the City of Sedona's Standard 10-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-foot 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 Employees."

- 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.

Technical Specifications

In Association with Civil Improvement Plans

Ranger Station Park

Sedona, Arizona



Feb 2023

TECHNICAL SPECIFICATIONS

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1.0 GENERAL TECHNICAL REQUIREMENTS

The following items are non-payment items being considered incidental to the project, the costs of which are to be included in project overhead or within a specific bid item.

1.1 Additional Reference Standards

The “MAG Specifications” is more particularly defined as the Maricopa Association of Governments (MAG), *Uniform Standard Specifications and Details for Public Works Construction*, 2015 Edition with latest 2019 revisions.

Latest revisions and amendments to City of Sedona, City Code, Title 15 (Building) and Title 13 (Stormwater).

City of Sedona Design Review, Engineering, and Administrative Manual

U.S. Department of Transportation, *Manual on Uniform Traffic Control Devices (MUTCD)*, 2009 Edition with latest revisions

Arizona Department of Transportation, *2008 Standard Specifications*, 2008 Edition with latest 2019 and monthly revisions.

Latest revisions of ASTM, AWWA, ANSI, or Federal specifications, standards and details.

In the event of a conflict between the Construction Drawings *and* the Contract language, the Contract language shall prevail.

In the event of a conflict between the ASTM, AWWA, ANSI, or Federal specifications, standards and details *and* the MAG Uniform Standard Specifications and Details for Public Works Construction or the City Construction Specifications, the City Construction Specifications shall prevail.

In the event of a conflict between the AWWA, ANSI, or Federal specifications, standards and details and the Contract language, the Contract language shall prevail.

1.2 Soil and Subsurface Conditions

A soils report was not prepared for this project.

1.3 Other Agency/Utility Company Notifications/Protection of Existing Facilities

The Contractor shall conduct his operations as set forth in Section 105.6 of the MAG Standard Specifications. The Contractor is responsible for protecting all existing facilities during construction at no additional cost to the City. This may include but is not limited to coordinating, potholing and monitoring as directed by the individual utility companies. The locations of existing underground utilities have been shown on the plans to the best of the Design Engineer's knowledge; however, it shall be the Contractor's responsibility to field verify all utility locations and to coordinate in a timely manner with the pertinent utility companies so that any obstructing utility installation may be adjusted without delay to the

Contractor's project schedule. The Contractor shall be responsible for potholing all utility conflicts as deemed necessary by the Engineer in a timely manner.

The following utilities have facilities in the vicinity of the project limits:

City of Sedona (sewer, traffic control)
Century Link
Suddenlink
Unisource
APS-Electric
Arizona Water Company

Contacts: The following telephone numbers should put the Contractor in contact with the proper personnel:

City of Sedona Project Manager – Larry Farhat
102 Roadrunner Drive, Sedona, AZ. 86336-3710
Tel: 928-203-5058, lfarhat@sedonaaz.gov

Lumen (Telephone Co.) – Armen McNerlin
500 S Calvary Way, Cottonwood, AZ, 86326
Tel: 928-821-4609, armen.mcnerlin@lumen.com

Altice (Cable Co.) – Sanford Yazzie
1601 S. Plaza Way, Flagstaff, AZ 86004
Tel: 928-606-2464, sanford.yazzie@altice.com

Unisource – Martin Conboy
2901 W. Shamrell Blvd., #100, Flagstaff, AZ 86001
Tel: 928-226-2269, mconboy@uesaz.com

Arizona Water Company – John Snickers
65 Coffee Pot Drive, Suite 7, Sedona, AZ 86336
Tel: 928-282-5555, jsnickers@azwater.com

APS Electric – Matthew Herrera
1250 E. State Route 89A, Cottonwood, AZ 86326
Tel: (928) 274-9659, matthew.herrera@aps.com

Coordination:

Coordination with the pertinent utility companies has been a part of the development of this project. Construction activities shall be coordinated and scheduled to incorporate the following applicable utility construction activities.

The contractor shall call “BLUE STAKE” (1-800-STAKE-IT) and notify the appropriate private, public and municipal utility companies 48 hours prior to any construction work to verify location and depth of all utility lines in the area of work. Utilities if indicated on plans are approximate locations only, taken from the utility company maps. If the contractor

encounters any lines not indicated on the drawings or marked in the field by the utility company that may interfere with his work, he shall notify the appropriate utility company immediately for disposition of those facilities.

Water, sewer, gas, electric, cable, and telephone will need to be protected in place during construction during the relocation of water, gas and communication lines. The contractor shall coordinate with the City project Manager and the utility companies.

1.4 Submittals

1.4.1 General

All submittals shall conform to the requirements of MAG Standard Specifications Section 105.2, except as modified by Section 25 of the Contract's General Conditions and as noted herein.

1.4.2 Format, Distribution and Review

Shop drawing submittals shall be on no larger than 24"x36" or 11"x17" sheets as needed. All drawings shall indicate the name of the job, the City's job number, date, names of the Contractor and subcontractor, and the date of approval by the Contractor. All other technical data, catalog cut sheets, material/fabrication certificates or material mix design reports shall be emailed to the City or its authorized representative. Each submittal package must have a separate transmittal document, cover sheet and index. The Contractor must also create and update a standardized, itemized submittal tracking log spreadsheet and attach with each submittal or re-submittal.

The Contractor shall first review all submitted data for compliance with the specifications and job requirements prior to any submittal. Clearly indicate what specific item, type, model, class, color, size, etc. is to be used and note any Contractor comments or recommendations on the submitted data. A digital file of the Contractor approved copies along with a letter of transmittal and the tracking log sheet shall be emailed to the City or its authorized representative.

The Contractor shall anticipate and schedule for a review period of ten (10) business days by the City and/or its designee during which time the submittal(s) will either be approved, approved with comments, disapproved, asked to be revised, or additional information may be requested. A review of the submittal will be scanned and emailed stamped/noted approved or otherwise, to the Contractor by the City or its authorized representative. The latter three directions will require a re-submittal and subsequent additional ten-day review period. Re-submittals shall be made within seven (7) business days. The process will be repeated until all required, submitted materials have been approved. Approved shop drawings and other material submittals shall become a portion of the Contract Documents as they are returned to the Contractor.

1.4.3 Materials / Product Data/Shop Drawings/Structural Drawings

The following materials / product data shall be submitted for review and approval:

- Restroom Building – shop drawings and stamped structural drawings
- Trellis Structure – shop drawings and stamped structural drawings

- Electrical Drawings and associated design calculations
- Hilfiker Artweld Gabion Baskets & Mattresses – sample and product data
- Hilfiker Artweld Gabion Fasteners – sample and product data
- Decomposed granite surfacing - sample and product data
- Soil Amendment – see Section 029140
- Soil Fertilizer – see Section 029140
- Sod – see Section 029220
- Irrigation – see Section 028000Rebar
- Concrete masonry block
- Storm drain pipe
- Trail striping

Product data shall include information such as the manufacturer's printed recommendations, compliance with recognized trade association standards, application of testing agency labels and seals, product dimensioning, and notation of coordination requirements. Data shall also include the source location and quantity of materials that are or will be available for the project. The Contractor shall provide materials that have uniformity in color, size, and appearance.

1.4.4 Mix Designs

The following mix designs shall be submitted for review and approval:

- Asphalt Concrete (AC) pavement
- Aggregate Base Course (ABC) material
- Concrete
- Decomposed Granite

The mix designs shall directly compare the proposed mix components and properties with those of the referenced standard mix or as modified within the designated specifications.

1.4.5 Documents

The following shop drawings or documents shall be submitted for review and approval:

- Traffic control plans-haul routes, staging area, contractor's office location
- Construction Team Contacts
- Construction schedules
- 24-hour emergency contacts (names and phone numbers)
- As-built plan drawings

All dimensions and identification of products and materials included, along with notation of any coordination requirements and established field dimensions/measurements shall be clearly shown or noted.

1.4.6 Poured in Place Concrete

The consistency of the concrete shall be determined and regulated based on the slump

test as described by ASTM C-143. Slump tests shall be provided by the Contractor throughout the progress of the project. Concrete grade minimums shall be as noted on plans and in the following specifications. See City of Sedona General Conditions Section 58 for additional information.

All exposed concrete unless otherwise designated shall be an integral "Red Rock Sedona" color. The amount of concrete color additive required is 3.05 lbs of Davis 160 liquid per sack of concrete. Variations in the additive to accomplish the "Red Rock Sedona" shall be subject to City Engineer approval.

1.4.7 Warranties

Furnish written warranties and reports on the findings of all tests that are specifically required by the Specifications. Delivery of such warranties and test results shall not relieve the Contractor from any obligation assumed under any other provisions of the Contract.

1.5 **Permits**

The City of Sedona Engineering Right-of-Way Permit fee will be waived for this project. All required permits will be the Contractor's responsibility to obtain and pay for including but not limited to; ADEQ Construction Activity General Permit and Arizona Water Company fire hydrant meter fees, if applicable. The cost for all permits shall be included in the Contractor's schedule of values.

1.6 **Quality Control and Testing**

Quality Control and Testing shall be completed per Section 58 of the General Conditions and as supplemented in this section. For quality control purposes, the Contractor shall provide and pay for all geotechnical services including material sampling and testing. This work shall be paid as a lump sum item. Samples shall be taken under the direction of the City or its authorized representative. Testing shall be performed by an independent testing laboratory, pre-approved by the City or its authorized representative, under the supervision of a professional civil or geotechnical engineer registered in the State of Arizona. Written test reports shall be sent directly to the City or its authorized representative within five (5) business days after the tests are conducted. Each report shall indicate the location at which the test was made, the date of the test, type and source of material tested, test designation being used and the name of the person who performed the test. The Contractor shall pay for any retesting as a result of a failed test.

1.6.1 Aggregate Base Materials Compaction Tests

One (1) compaction test will be required on the compacted base material every 500 feet of the shared use path or fraction thereof. Areas of less than 500 feet in length will require a minimum of two (2) tests. The City or its authorized representative will choose the location and depth of in place density tests. If any test made should fail, the area must be reworked, and two (2) additional tests shall be taken at the Contractor's expense. The compacted base material shall be compacted to one hundred (100%) percent of maximum density for the full depth when tested in accordance with MAG Specifications Section 310.3.

1.6.2 Poured in Place Concrete

The consistency of the concrete shall be determined and regulated based on the slump test as described by ASTM C-143. Slump tests shall be provided by the Contractor throughout the progress of the project. Concrete shall be of the class and strength indicated on the Contract Plan Drawings or as otherwise directed by these Specifications.

Not less than four (4) cylinder specimens shall be made by the Contractor for each 50 cubic yards of each class of concrete with a minimum of four (4) specimens for each class placed or not less than 4 specimens for each half-day of placement. Specimens shall be tested in accordance with ASTM C-42. Two (2) cylinders shall be tested at fourteen (14) days. If the tested strength meets or exceeds the minimum 14-day requirements, the City may accept the concrete. The City or its authorized representative may have the other two cylinders tested at 28 days or discard at 60 days. Retesting as a result of failure shall be done at the Contractor's expense. Concrete within the City of Sedona right of way shall be "Red Rock Sedona" color. Slump of 3" min. - 6" max., with air entrainment of 4.5% min. to 7.5% max.

1.7 Construction Survey

The Contractor shall be required to employ a surveyor with the experience and capability of performing all survey, control and layout tasks required of the Contractor to properly construct the Work. The surveyor must be an independent land surveyor registered in the State of Arizona, subcontracted to the Contractor and be acceptable to the City.

1.7.1 General

From established primary control points, Contractor shall furnish all required lines, measurements, grades, and elevations for construction of all facilities, structures, pipelines, street construction and all other site improvements.

Contractor shall establish a base line for the project based upon the control information provided in the Contract Documents and establish a minimum of three benchmarks suitable to the work.

Contractor shall develop and make all detailed surveys, measurements and staking needed for construction including all temporary benchmarks, control points, work lines, stationing, grade / slope elevations, pipe / structure inverts, batter boards, off-sets, and cut sheets.

Contractor shall keep current, accurate, organized, and legible as-built notes and measurements of the constructed work. Surveyor shall maintain a complete and accurate log of all control and survey work as it progresses. All survey data, field notes and computations shall be recorded and kept in industry standard hard bound field books, all in accordance with recognized established professional surveying standards.

Contractor shall be held responsible for the preservation of all benchmarks, points, marks, and stakes made or established for the work. Contractor shall reestablish and replace the same, at no additional cost to the City, any construction surveying / staking that has been accidentally, carelessly or willfully destroyed by any party.

1.7.2 As-built Record Drawings

As-built record drawings shall be completed as described in Sections 15, 26, 31, and 32 of the General Conditions.

As-built drawings shall have these items accurately located in the same coordinate system used for the original survey: backflow preventer, irrigation lines, quick couplers, water lines and sewer lines. The Contractor shall submit to the City a copy of the As-Built plans in the following formats: AutoCAD 2016 format (or earlier version), PDF format, 24"x36" hard copy.

2.0 MEASUREMENT AND PAYMENT

2.1 General

Measurement for each bid item shall be done in the units installed or percent complete as indicated in the Contract's Price Sheet. Measurement shall be for all work that is satisfactorily completed in place, with no allowance for waste, and that which is verified by field measurements.

Specific payment guidelines shall be in accordance with the MAG Specifications as applicable or as more particularly described below in Section 2.2, Items of Work, of these Technical Specifications. Payment will be made at the unit price or lump sum price that was bid and is shown on the Bid Schedule and shall constitute payment in full for furnishing all materials, equipment, appurtenances, labor, plant and tools necessary to provide a complete project in a workmanlike and satisfactory manner as shown by the Contract Drawings and described herein.

2.2.0 Items of Work

The item numbers listed below correspond to the item numbers listed in the Bid Schedule. Items are separated by demolition Items and construction items.

2.2.1 Demolition Items:

2.2.1.1 Clear and Grub

This work consists of removal, disposal, clearing, and grubbing including trees less than 4" diameter at breast height and paradise trees of all diameters, within the project area per the project demolition plans. Work under this item shall be in accordance with MAG Section 201 and General Conditions Section 58. This item of work includes removal, disposal, clearing and grubbing for the project area improvements. The Contractor is responsible for damage to adjacent existing improvements. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete clearing and grubbing of this item.

2.2.1.2 Remove and Dispose Existing Concrete

This work shall consist of removing and disposing of the portland cement concrete per the project plans. Work under this item shall be in accordance with MAG Sections 336 and 350. The Contractor is responsible for damage to adjacent improvements. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete removal and disposal of this item.

2.2.1.3 Remove and Dispose Rip Rap

This work consists of removing and disposing rip rap as shown on the plans. The Contractor is responsible for damage to adjacent improvements. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete removal and disposal of this item.

2.2.1.4 Remove and Dispose Existing Storm Drain Pipe

This work consists of removing and disposing of portion of the existing storm drain pipe as shown on the plans. The Contractor is responsible for damage to adjacent

improvements. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete removal and disposal of this item.

2.2.1.5 Remove and Dispose Existing Headwall

This work shall consist of removing and disposing of existing headwall and any other associated rocks, walls or footings acting as part of the existing walls. Contractor is responsible for damage to adjacent improvements. Payment will be made at the contract unit price bid, and such payment shall be compensation in full removal and disposal of items.

2.2.2.0 Construction Items:

2.2.2.1 Subgrade Preparation

Work under this item shall conform to MAG Specification Section 301 and consist of Subgrade Preparation for constructing of the parking, playground, and walkway areas per MAG Section 301 as shown on the project plans or as directed by the Engineer and the following. Native subgrade soil to receive improvements shall be stripped of vegetation, debris, organic rich soils, and other deleterious materials. The subgrade shall be scarified and compacted to a minimum of 95% of the maximum density as determined by AASHTO test T99 (or ASTM D698), method and/or method T-191. Clayey soils shall be compacted and maintained (until covered) at a moisture content in the range of optimum -3 to +1%. Existing sloping areas steeper than 3:1 (horizontal to vertical) shall be benched to reduce the potential for slippage between existing slopes and new fills. Benches shall be level and wide enough to accommodate compaction and earth moving equipment. Isolated clay pockets, if any, shall be over excavated below subgrade and replaced with granular material. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete preparation of this item.

2.2.2.2 Construct Concrete Walking Path

Work under this item shall consist of constructing Class A concrete walking path with a medium broom finish to be in conformance with MAG Detail 230 and per the project plans including aggregate base course and "Red Rock Sedona" Coloring. Placement, compaction, and material of aggregate base course shall be in accordance with MAG Specifications Section 310 and 702; additionally, compacted to 100% max dry density standard proctor (ASTM D698). Placement of "Red Rock Sedona" portland cement concrete walkways shall be in accordance with MAG Specifications Section 324 and 340 and General Conditions 58. All exposed concrete surfaces shall be integrally colored "Red Rock Sedona". The amount of concrete color additive required is 3.05 lbs of Davis 160 liquid per sack of concrete. This is the "Red Rock Sedona" as manufactured by Hanson Concrete in Cottonwood, Arizona. Variations in the additive to accomplish the "Red Rock Sedona" shall be subject to City Engineer approval. The Contractor is responsible for submitting a mix design from an approved materials laboratory to the Construction Manager for review and approval. The Contractor shall submit written certification that the concrete meets all requirements of MAG Section 725 Class A. All other sampling and testing required shall be performed by the Contractor as part of the Quality Control program for the project. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for

the complete construction of this item.

2.2.2.3 Construct Concrete Driveway Entrance

Work under this item shall consist of constructing Class A concrete driveway with a medium broom finish to be in conformance with MAG Detail 230 and per the project plans including aggregate base course and "Red Rock Sedona" Coloring. Placement, compaction, and material of aggregate base course shall be in accordance with MAG Specifications Section 310 and 702; additionally, compacted to 100% max dry density standard proctor (ASTM D698). Placement of "Red Rock Sedona" portland cement concrete walkways shall be in accordance with MAG Specifications Section 324 and 340 and General Conditions 58. All exposed concrete surfaces shall be integrally colored "Red Rock Sedona". The amount of concrete color additive required is 3.05 lbs of Davis 160 liquid per sack of concrete. This is the Red Rock Sedona as manufactured by Hanson Concrete in Cottonwood, Arizona. Variations in the additive to accomplish the "Red Rock Sedona" shall be subject to City Engineer approval. Slump 3" min. - 6" max. Air Entrainment 4.5% min. to 7.5% max. The Contractor is responsible for submitting a mix design from an approved materials laboratory to the Construction Manager for review and approval. The Contractor shall submit written certification that the concrete meets all requirements of MAG Section 725 Class A. All other sampling and testing required shall be performed by the Contractor as part of the Quality Control program for the project. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item

2.2.2.4 Construct Concrete ADA Parking

Work under this item shall consist of constructing Class A concrete ADA parking area with a medium broom finish to be in conformance with MAG Detail 230 and per the project plans including aggregate base course and "Red Rock Sedona" Coloring. Placement, compaction, and material of aggregate base course shall be in accordance with MAG Specifications Section 310 and 702; additionally, compacted to 100% max dry density standard proctor (ASTM D698). Placement of "Red Rock Sedona" portland cement concrete walkways shall be in accordance with MAG Specifications Section 324 and 340 and General Conditions 58. All exposed concrete surfaces shall be integrally colored "Red Rock Sedona". The amount of concrete color additive required is 3.05 lbs of Davis 160 liquid per sack of concrete. This is the Sedona Red as manufactured by Hanson Concrete in Cottonwood, Arizona. Variations in the additive to accomplish the "Red Rock Sedona" shall be subject to City Engineer approval. The Contractor is responsible for submitting a mix design from an approved materials laboratory to the Construction Manager for review and approval. The Contractor shall submit written certification that the concrete meets all requirements of MAG Section 725 Class A. All other sampling and testing required shall be performed by the Contractor as part of the Quality Control program for the project. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item. Slump 3" min. - 6" max. Air Entrainment 4.5% min. to 7.5% max.

2.2.2.5 Construct Aggregate Base Course Parking Area

Work under this item shall consist of constructing the aggregate base course parking area per Detail 220 Type C and the project plans. Construction shall conform to the requirements of MAG Section 340 and 725, and General Conditions Section 58. Payment

will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.6 Construct Stabilized Decomposed Granite Trail

Work under this item consists of furnishing all labor, materials, equipment, tools, and transportation, and perform all operations in connection with and reasonably incidental to complete installation of the stabilized decomposed granite installation, and guarantee/warranty as shown on the drawings and as specified herein. Items of work specifically included are:

1. Stabilized decomposed granite path (pedestrian use)
2. Weed control

Materials:

- A. Use locally available materials and gradations that exhibit a satisfactory record of previous installations. Meet all other requirements as specified Section 702.4 of MAG Standard Specifications.
- B. Stabilized Decomposed Granite: The stabilizing agent shall be SoilShield LS or approved equivalent. The stabilizing agent shall be a nonflammable concentrated polyvinyl acrylic copolymer with a formulation containing a minimum of 60% solids which may be diluted for application at job site. After drying, the copolymer shall form a colorless, transparent micro-plastic like film to agglomerate particles and allow exchange of air and moisture. The product shall have a minimum effective service life of at least two years, provided surface is maintained according to manufacturer's recommendations.
 1. When cured, the copolymer emulsion shall not re-emulsify and shall be biodegradable and non-toxic to plant and animal life. After application and drying, a core of the treated section shall be able to maintain a portion of its shape, elasticity, and a portion of its strength after being submerged in water for a 24-hour period.
 2. Decomposed granite shall be 1/4" minus, unless otherwise required by the stabilizer manufacturer. The granite color shall be Sedona Red unless the Owner's Representative approves in writing other colors and/or suppliers. Sufficient rock shall be available from a single source to complete the project. Granite shall be free from all foreign objects, irregularities in color or form, calcareous coating, or caliche. Granite shall be stabilized to a depth of 3 inches.
- C. Herbicide Treatment: Commercial chemical for weed control, registered by Environmental Protection Agency, and as approved for use as a chemical per Arizona Certified Pest Control advisor and as recommended by the stabilizer manufacturer.

Surface Preparation:

- A. General: Remove loose material from compacted subgrade and prepare the ground surface immediately before applying herbicide treatment in accordance with the recommendations of the stabilizer supplier.
- B. Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturer's recommended dosages and application instructions, and as

approved for use as a chemical per Arizona Certified Pest Control advisor. Apply to compacted, dry subgrade prior to application of granite as recommended by the stabilizer supplier.

Stabilized Decomposed Granite:

- A. Install stabilizer and granite per the supplier's recommended procedure. A product representative must be present at all times during the granite installation.
- B. Protection: Erect barricades to protect paving from traffic until mixture has set enough not to become marked.
- C. Prior to starting production placement of the granite, an 80 square foot sample segment of stabilized granite installation shall be installed under the supervision of the stabilizer supplier's representative. Make adjustments to the installation methods and techniques as directed by the representative. Once accepted, the approved method shall become the installation method used on the project. No production shall occur until the representative has approved in writing the sample installation.

Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item

2.2.2.7 Protect Existing Trees in Place

Work under this item shall consist of protecting in place the trees as noted per the project plans. Contractor is responsible for damage to adjacent improvements. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the protection of items.

2.2.2.8 Construct Seat Wall

Work under this item shall consist of constructing a masonry and concrete seat wall in conformance with Detail H on Sheet C2 of the project plans. Construction shall conform to the requirements of MAG Sections 505, 510, 725, and General Conditions Section 58. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.9 Construct Gabion Seat Wall

Work under this item shall consist of constructing a Hilfiker Artweld gabion seat wall per Landscape Architectural Plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.10 Construct 1" PVC Water Line

Work under this item shall consist of construction of 1" diameter schedule 40 PVC water line per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.11 Install 1" Brass Ball Valve

Work under this item shall consist of installing 1" brass ball valve on water service lines per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation of this item.

2.2.2.12 Construct 2" Water Service Line and Meter

Work under this item shall consist of construction of 2" water service and water meter and box per Arizona Water Company Detail E-9-11-1 and the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.13 Construct 1-1/2" PVC Water Line

Work under this item shall consist of construction of 1-1/2" diameter schedule 40 PVC water line per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.14 Install 1-1/2" Brass Ball Valve

Work under this item shall consist of installing 1-1/2" brass ball valve on water service lines per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation of this item.

2.2.2.15 Install Valve Box

Work under this item shall consist of installing valve box per MAG Detail 391 per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full installation of this item.

2.2.2.16 Install Backflow Prevention Device

Work under this item shall consist of installing a 2" Zurn Model 975XL2 Reduced Pressure Principle or equivalent backflow prevention device. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation of this item.

2.2.2.17 Construct 4" PVC Sewer Service

Work under this item shall consist of construction of 4" SDR 35 PVC sewer service per project plans. Construction shall conform to the requirements of MAG Sections 615, and 745 and per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.18 Install 4" Sewer Cleanout with Frame and Cover

Work under this item shall consist of installing 4" sewer cleanout with frame and cover per MAG Detail 270 and per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation of this item.

2.2.2.19 Construct 12" Standard CMP

Work under this item shall consist of construction of 12" diameter 14 gage minimum corrugated metal drainage piping per the project plans. Construction shall be in accordance with MAG Sections, 601, 618, 621 and 760. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.20 Construct 18" Standard CMP

Work under this item shall consist of construction of 18" diameter 14 gage minimum corrugated metal drainage piping per the project plans. Construction shall be in accordance with MAG Sections, 601, 618, 621 and 760. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.21 Install 18" Flared End Section

Work under this item shall consist of installing 18" flared end section per the project plans. Construction shall be in accordance with MAG Sections, 601, 618, 621 and 760. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation of this item

2.2.2.22 Install Rip Rap

Work under this item shall consist of installing $D_{50}=4"$ (8" thick) red rock rip rap per the project plans. Rip rap will be provided by the City of Sedona. Contractor will be responsible for loading and hauling this material from the City Wastewater Treatment Plant. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation of this item.

2.2.2.23 Gabion Baskets and Mattresses

Work under this item shall be in accordance with MAG Specification Sections 201, 206 and 510. Materials shall conform to the requirements of MAG Specification Sections 725 and 776 and, General Conditions Section 58. Gabions shall conform to the requirements of Gabion Construction ASTM A975-97, and the construction plan details and requirements. Gabions shall be Hilfiker Artweld, or equivalent installed per the dimensions and details shown on the plans. Installation shall conform to the manufacturer's recommendations. All baskets and mattresses shall be tied together using ring fasteners with the manufacturers recommended materials, spacing, methods and procedures. Gabions and fasteners shall be per the manufacture's specifications. Filling of the gabion baskets with rock shall be per the manufacturer's recommendations. Fill rock shall be angular, not subject to disintegration on exposure to water or weathering during the life of the structure, range in size between 4" and 8". The size shall be such that a minimum of three layers of rock must be achieved when filling the gabions. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation of this item.

2.2.2.24 Stripe and Sign Accessible Parking Spaces

Work under this item shall consist of solid white striping in conformance with ADOT Standard Specification 704 and ADA signage per the MUTCD, ADA and project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.25 Single Dumpster Enclosure

Work under this item shall consist of construction of a single dumpster enclosure per Detail F on Sheet C2 of the project plans. Payment will be made at the contract unit price

bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.26 ADA Ramp with Handrails

Work under this item shall consist of construction of ADA ramp with handrails per Detail 5 on Sheet LA-203 of the Landscape project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.27 Concrete Steps with Handrails

Work under this item shall consist of construction of concrete steps with handrails per Detail F on Sheet C2 of the Civil project plans and Detail 5 on Sheet LA-203 of the Landscape project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.28 Removable Chain Barricade

Work under this item shall consist of construction of chain barricade per Detail 5 on Sheet LA-201 of the Landscape project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.29 Install Lockable Electric Outlet

Work under this item shall consist of installation of lockable electric outlet per detail A on Sheet C7 and at the locations shown on the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.2.30 PVC Electrical Conduit

Work under this item shall consist of construction of a PVC electrical conduit per the size and locations shown on Sheet C7 of the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete construction of this item.

2.2.3 Grading Construction Items:

2.2.3.1 Earthwork Excavation

Work under this item shall be in accordance with MAG Sections 201 and 206. This item of work includes excavation and possible haul off of material for the construction of the proposed drainage improvements per the project plans. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete fill placement of this item.

2.2.3.2 Earthwork Embankment

Work under this item shall include placement of fill as shown on the project plans and per points and contours shown on the project plans. Work under this item shall be in accordance with MAG Sections 211. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete fill placement of this

item.

2.2.4 Miscellaneous Items:

2.2.4.1 Mobilization

The City shall compensate the Contractor for a one-time, round-trip mobilization of the contractor's personnel equipment, supplies and incidentals, establishment of offices, buildings, and other facilities, required for the performance of the work on the project, as well as preparatory work and operations prior to the commencement of the work on the project site. Mobilization will be measured for payment by the lump sum as a single complete unit of work. This item includes managing and protecting the staging and storage areas utilized by the contractor. See Special Conditions and General Conditions for further information. This item also includes the restoration of the staging and storage areas to a condition equal to or better than the condition of the area prior to construction beginning for this project, as approved by the City Engineer. This work shall be in compliance with General Conditions Sections 18, 33, and 67.

2.2.4.2 Erosion Control

This work shall consist of installing the BMPs to prevent erosion and sediment transport. A City Storm Water Pollution Prevention Plan form can be obtained at the City of Sedona offices. An ADEQ Construction Activity General Permit for storm water will be required for this project if disturbance is greater than one acre. Payment will be made at the contract unit price bid, and such payment shall be compensation in full for the complete installation and maintenance throughout the Project duration. Payment for the SWPPP measures will be made on the lump sum basis of contract item, and such payment shall be prorated over the project duration. All work shall be in compliance with the City of Sedona NOI.

2.2.4.3 Quality Assurance and Quality Control Testing

This work consists of the testing of the compaction and material conformance as provided herein and in accordance with MAG Section 100 – General Conditions. Payment for this item will be prorated (overall project percent completion) over the project's duration. Payment for QA/QC Testing will be based on a unit cost lump sum basis. Payment for this item will be prorated (overall project percent completion) over the project's duration.

2.2.4.4 Construction Staking

The work under this item shall consist of furnishing all materials, equipment, and labor necessary for providing construction survey, layout, and staking. This item must comply with Section 1.7, Construction Survey of this Contract's Technical Specifications. Payment for Survey, Layout and Staking will be based on a unit cost lump sum basis. Payment for this item will be prorated (overall project percent completion) over the project's duration.

2.2.4.5 Construction Observation

The work under this item shall consist of periodic site visits to observe the progress of the project, prepare addenda, review submittals, and respond to requests for information from the Contractor. This item includes attending the pre-bid and pre-construction meeting.

2.2.4.6 Traffic Control

This work shall consist of providing and managing all necessary traffic control measures per General Conditions Section 18.D. Payment for traffic control measures will be made on the lump sum basis of contract item, and such payment shall be prorated over the project duration.

2.3 ***Earthwork***

2.3.1 Materials

Clean on-site native soils with a maximum dimension of 6 inches or imported materials may be used as fill material for the following:

- Parking areas
- Playground
- Playing field
- Stormwater basin area

Frozen soils should not be used as fill or backfill.

Imported soils should conform to the following:

Gradation (ASTM C136):	Percent finer by weight
6"	100
4"	85-100
3/4"	70-100
No. 4 Sieve	50-100
No. 200 Sieve	50 (max)
Max expansive potential (%) *	1.5
Max soluble sulfates (%)	0.10
*Measured on a sample compacted to approximately 95 percent of the ASTM D698 maximum dry density at about 3 percent below optimum water content. The sample is confined under a 100 psf surcharge and submerged.	

Aggregate base course shall conform to City Specifications.

2.3.2 Placement and Compaction

Place and compact fill in horizontal lifts, using equipment and procedures that will produce recommended water contents and densities throughout the lift.

No fill should be placed over frozen ground.

Materials should be compacted to the following:

Material	Minimum Percent Compaction (ASTM D698)
On-site and imported soils, reworked and fill: Below footings	95

Below drainage facilities	95
Below pavement	95
Aggregate base course:	
Below footings	95
Below pavement	100
Miscellaneous backfill	95

Technical Specifications

In Association with 100% Sealed Construction Documents

Ranger Station Park

Sedona, Arizona
February 03, 2023

Prepared by: Norris Design



TECHNICAL SPECIFICATIONS

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1.0 GENERAL TECHNICAL REQUIREMENTS

The following items are non-payment items being considered incidental to the project, the costs of which are to be included in project overhead or within a specific bid item.

PART 1 1.1 ADDITIONAL REFERENCE STANDARDS

The "MAG Specifications" is more particularly defined as the Maricopa Association of Governments (MAG), *Uniform Standard Specifications and Details for Public Works Construction*, 1998 Edition with latest revisions.

Latest revisions and amendments to City of Sedona, City Code, Title 15 (Building) and Title 13 (Stormwater).

U.S. Department of Transportation, *Manual on Uniform Traffic Control Devices (MUTCD)*, 2003 Edition with latest revisions

Latest revisions of ASTM, AWWA, ANSI, or Federal specifications, standards and details.

In the event of a conflict between the Construction Drawings *and* the Contract language, the Contract language shall prevail.

In the event of a conflict between the ASTM, AWWA, ANSI, or Federal specifications, standards and details *and* the MAG Uniform Standard Specifications and Details for Public Works Construction or the City Construction Specifications, the City Construction Specifications shall prevail.

In the event of a conflict between the AWWA, ANSI, or Federal specifications, standards and details and the Contract language, the Contract language shall prevail.

PART 2 1.2 SOIL AND SUBSURFACE CONDITIONS

The soils report was prepared by Western Technologies dated February 24, 2017 and is attached.

PART 3 1.3 OTHER AGENCY/UTILITY COMPANY NOTIFICATIONS/PROTECTION OF EXISTING FACILITIES

The Contractor shall conduct his operations as set forth in Section 105.6 of the MAG Standard Specifications. The Contractor is responsible for protecting all existing facilities during construction at no additional cost to the City. This may include but is not limited to coordinating, potholing and monitoring as directed by the individual utility companies. The locations of existing underground utilities have been shown on the plans to the best of the Design Engineer's knowledge; however, it shall be the Contractor's responsibility to field verify all utility locations and to coordinate in a timely manner with the pertinent utility companies so that any obstructing utility installation may be adjusted without delay to the Contractor's project schedule. The Contractor shall be responsible for potholing all utility conflicts in a timely manner.

PART 4 1.4 SUBMITTALS

1.4.1 General

All submittals shall conform to the requirements of MAG Standard Specifications Section 105.2, except as modified by Section 25 of the Contract's General Conditions and as noted herein.

1.4.2 Format, Distribution and Review

Shop drawing submittals shall be on no larger than 24"x36" or 11"x17" sheets as needed. All drawings shall indicate the name of the job, the City's job number, date, names of the Contractor and subcontractor, and the date of approval by the Contractor. All other technical data, catalog cut sheets, material/fabrication certificates or material mix design reports shall be emailed to the City or its authorized representative. Each submittal

package must have a separate transmittal document, cover sheet and index. The Contractor must also create and update a standardized, itemized submittal tracking log spreadsheet and attach with each submittal or re-submittal.

The Contractor shall first review all submitted data for compliance with the specifications and job requirements prior to any submittal. Clearly indicate what specific item, type, model, class, color, size, etc. is to be used and note any Contractor comments or recommendations on the submitted data. A digital file of the Contractor approved copies along with a letter of transmittal and the tracking log sheet shall be emailed to the City or its authorized representative.

The Contractor shall anticipate and schedule for a review period of ten (10) business days by the City and/or its designee during which time the submittal(s) will either be approved, approved with comments, disapproved, asked to be revised, or additional information may be requested. A review of the submittal will be scanned and emailed stamped/noted approved or otherwise, to the Contractor by the City or its authorized representative. The latter three directions will require a re-submittal and subsequent additional ten day review period. Re-submittals shall be made within seven (7) business days. The process will be repeated until all required, submitted materials have been approved. Approved shop drawings and other material submittals shall become a portion of the Contract Documents as they are returned to the Contractor.

1.4.3 Materials / Product Data / Shop Drawings / Structural Drawings

The following materials / product data / Shop Drawings shall be submitted for review and approval:

- Restroom Building – shop drawings and stamped structural drawings
- Electrical Drawings and associated design calculations
- Welded Wire Mesh – sample and product data
- Welded Wire Mesh Fasteners – sample and product data
- Decomposed granite surfacing - sample and product data
- Soil Amendment – see Section 029140
- Soil Fertilizer – see Section 029140
- Sod – see Section 029220
- Irrigation – see Section 028000

Product data shall include information such as the manufacturer's printed recommendations, compliance with recognized trade association standards, application of testing agency labels and seals, product dimensioning, and notation of coordination requirements. Data shall also include the source location and quantity of materials that are or will be available for the project. The Contractor shall provide materials that have uniformity in color, size, and appearance.

1.4.4 Mix Designs

The following mix designs shall be submitted for review and approval:

- Aggregate Base Course (ABC) material
- Concrete
- Decomposed Granite

The mix designs shall directly compare the proposed mix components and properties with those of the referenced standard mix or as modified within the designated specifications.

1.4.5 Documents

The following documents shall be submitted for review and approval:

- Construction Schedule
- Construction Team Contacts
- 24-hour emergency contacts (names and phone numbers)
- As-built plan drawings

All dimensions and identification of products and materials included, along with notation of any coordination requirements and established field dimensions/measurements shall be clearly shown or noted.

1.4.6 Poured In Place Concrete

The consistency of the concrete shall be determined and regulated on the basis of the slump test as described by ASTM C-143. Slump tests shall be provided by the Contractor throughout the progress of the project. Concrete shall be Grade A. Slump 3" min. - 6" max. Air Entrainment 4.5% min to 7.5% max. See City of Sedona General Conditions Section 58 for additional information.

All exposed concrete shall be an integral "Red Rock Sedona" color. The amount of concrete color additive required is 3.05 lbs. of Davis 160 liquid per sack of concrete. Variations in the additive to accomplish the "Red Rock Sedona" shall be subject to City Engineer approval.

1.4.7 Warranties

Furnish written warranties and reports on the findings of all tests that are specifically required by the Specifications. Delivery of such warranties and test results shall not relieve the Contractor from any obligation assumed under any other provisions of the Contract.

PART 5 1.5 PERMITS

The City of Sedona Engineering Right-of-Way Permit fee will be waived for this project. All required permits will be the Contractor's responsibility to obtain and pay for including but not limited to; SWPPP, ADEQ Dust Control permit and Arizona Water Company fire hydrant meter fees, if applicable. The cost for all permits shall be included in the Contractor's schedule of values.

PART 6 1.6 QUALITY CONTROL AND TESTING

Quality Control and Testing shall be completed per Section 58 of the Sedona General Conditions and as supplemented in this section and following sections of this document.

1.6.1 Aggregate Base Materials Compaction Tests

One (1) compaction test will be required on the compacted base material every 500 feet of pavement cut or fraction thereof. Areas of less than 500 feet in length will require a minimum of two (2) tests. The City or its authorized representative will choose the location and depth of in place density tests. If any test made should fail, the area must be reworked and two (2) additional tests shall be taken at the Contractor's expense. The compacted base material shall be compacted to one hundred (100%) percent of maximum density for the full depth when tested in accordance with MAG Specifications Section 301.3 and 310.2. Aggregate base material shall not be placed on subgrade until final compaction tests of the subgrade have confirmed that the subgrade meets the compaction requirements of these Specifications.

1.6.2 Poured in Place Concrete

The consistency of the concrete shall be determined and regulated on the basis of the slump test as described by ASTM C-143. Slump tests shall be provided by the Contractor throughout the progress of the project. Concrete shall be of the class and strength indicated on the Contract Plan Drawings or as otherwise directed by these Specifications.

Not less than four (4) cylinder specimens shall be made by the Contractor for each 50 cubic yards of each class of concrete with a minimum of four (4) specimens for each class placed or not less than 4 specimens for each half-day of placement. Specimens shall be tested in accordance with ASTM C-42. Two (2) cylinders shall be tested at fourteen (14) days. If the tested strength meets or exceeds the minimum 14-day requirements, the City may accept the concrete. The City or its authorized representative may have the other

two cylinders tested at 28 days or discard at 60 days. Retesting as a result of failure shall be done at the Contractor's expense.

PART 7 1.7 CONSTRUCTION SURVEY

The Contractor shall be required to employ a surveyor with the experience and capability of performing all survey, control and layout tasks required of the Contractor to properly construct the Work. The surveyor must be an independent land surveyor registered in the State of Arizona, subcontracted to the Contractor and be acceptable to the City.

1.7.1 General

From established primary control points, Contractor shall furnish all required lines, measurements, grades and elevations for construction of all facilities, structures, pipelines, street construction and all other site improvements.

Contractor shall establish a base line for the project based upon the control information provided in the Contract Documents and establish a minimum of three benchmarks suitable to the work.

Contractor shall be held responsible for the preservation of all benchmarks, points, marks, and stakes made or established for the work. Contractor shall reestablish and replace the same, at no additional cost to the City, any construction surveying / staking that has been accidentally, carelessly or willfully destroyed by any party.

1.7.2 As-built Record Drawings

As-built drawings shall have these items accurately located in the same coordinate system used for the original survey: backflow preventer, irrigation lines, quick couplers, water lines and sewer lines.

The Contractor shall submit to the City a copy of the As-Built plans in the following formats: AutoCAD 2016 format (or earlier version), PDF format, 24"x36" hard copy.

2.0 MEASUREMENT AND PAYMENT

PART 8 2.1 GENERAL

Measurement for each bid item shall be done in the units installed or percent complete as indicated in the Contract's Price Sheet. Measurement shall be for all work that is satisfactorily completed in place, with no allowance for waste, and that which is verified by field measurements.

Specific payment guidelines shall be in accordance with the MAG Specifications as applicable. Payment will be made at the unit price or lump sum price that was bid and is shown on the Price Sheet and shall constitute payment in full for furnishing all materials, equipment, appurtenances, labor, and tools necessary to provide a complete project in a workmanlike and satisfactory manner as shown by the Contract Drawings and described herein. The Contractor shall warranty all contracted work and materials for a period of one (1) year after substantial completion has been issued by the Owner's Representative for the entire project. This one (1) year warranty shall incorporated into each bid item listed below.

PART 9 2.2 SCHEDULE OF WORK

The Schedule of Work shall be in accordance with the Contract's Price Sheet.

SECTION 028000

IRRIGATION

PART 1 - GENERAL

WORK INCLUDED

- A. Work of this Section generally includes provisions for the installation of an underground landscape irrigation system including the following:
 - 1. Static pressure verification
 - 2. Coordination of irrigation system installation with landscape material installation.
 - 3. Installation and testing of backflow preventers
 - 4. Excavation, backfill, and compaction of trenches
 - 5. Installation and pressure testing of mainline pipe
 - 6. Installation of lateral line pipe
 - 7. Installation of sleeves for pipe and wire under pavements
 - 8. Installation of mainline isolation valves
 - 9. Installation of automatic controllers
 - 10. Installation of control valves
 - 11. Installation of communication cable, control wiring, station decoders and related equipment
 - 12. Installation of drip emitters
 - 13. Installation of drip zone filters and pressure regulators
 - 14. Installation of pop up spray heads
 - 15. Replacement of unsatisfactory materials.
 - 16. Clean-up, Consultant Reviews, and Project Acceptance
 - 17. Operational testing of the irrigation system
 - 18. Initial maintenance of the irrigation system

RELATED SECTIONS

- B. Examine all sections related to project work includes, but is not limited to:
 - 1. Installation / planting of trees, shrubs, and turf areas.
 - 2. Construction hardscape and other site improvements.

REFERENCES

- C. Perform Work in accordance with requirements of Conditions of the Contract and MAG standards.
- D. The Contractor shall comply with all local, state, and federal regulations regarding materials, methods of work, and disposal of excess and waste materials. The Contractor shall provide notices required by governmental authorities, request required inspections, obtain required permits, and pay for all associated fees.
- E. Conform to requirements of reference information listed below except where more stringent requirements are shown or specified in Contract Documents.
 - 1. American Society for Testing and Materials (ASTM) - Specifications and Test Methods specifically referenced in this Section.
 - 2. Underwriters Laboratories (UL) - UL Wires and Cables.

QUALITY ASSURANCE

- F. Installer shall have had considerable experience and demonstrate ability in the installation of irrigation system(s) of specific type(s) in a neat orderly and responsible manner in accordance with recognized standards of workmanship. To demonstrate ability and experience necessary for this Project, and financial stability, submit if requested by Consultant, prior to contract award the following:
 - 1. List of 3 projects completed in the last 2 years of similar complexity to this Project. Description of projects shall include:
 - 2. Name of project.
 - 3. Location.
 - 4. Owner.
 - 5. Brief description of work and project budget.

- G. Special Requirements
 - 1. Work involving substantial plumbing for installation of copper piping, backflow preventer(s), and related work shall be executed by licensed and bonded plumber(s). Secure a permit at least 48 hours prior to start of installation.
 - 2. Tolerances
 - (a) Specified depths of mains and laterals and pitch of pipes are minimums. Settlement of trenches is cause for removal of finish grade treatment, refilling, compaction, and repair of finish grade treatment.
 - 3. Coordination with Other Contractors
 - (a) Protect, maintain, and coordinate Work with Work under other Section.
 - 4. Damage to Other Improvements
 - 5. Contractor shall replace or repair damage to concrete, walls, grading, soil preparation or planting done under other Sections during Work associated with installation of irrigation system at no additional cost to Owner.
 - 6. Backflow prevention assemblies shall be in conformance with and installed per local jurisdiction requirements.

- H. Pre-Construction Conference
 - 1. Contractor shall schedule and conduct a conference to review in detail quality control and construction requirements for equipment, materials, and systems used to perform the Work.
 - 2. Conference shall be scheduled not less than 10 days prior to commencement of Work. All parties required to be in attendance shall be notified no later than 7 days prior to date of conference.
 - 3. Contractor shall notify qualified representatives of each party concerned with that portion of Work to attend conference, including but not limited to Architect, Consultant, Contractor's Superintendent, and Installer.
 - 4. Minutes of conference shall be recorded and distributed by Contractor to all parties in attendance within five days of conference.

SUBMITTALS

- 5. Submit six copies of a complete materials list indicating manufacturer, model number, and description of all materials and equipment to be used. Show appropriate dimensions and adequate detail to accurately portray intent of construction.
- 6. Record Drawings (As-Builts)
- 7. At onset of irrigation installation secure AutoCAD files of original irrigation design from Owner.
- 8. At the end of every day, revise as-built prints for work accomplished that day in red ink. As-built field prints shall be brought up-to-date at the close of the working day every Friday by a qualified draftsman.
- 9. A print of record plan(s) shall be available at Project Site.
- 10. Indicate zoning changes on weekly as-built drawings.

11. Indicate non-pressure piping changes on as-built.
 12. Upon completion of Project, but prior to scheduling of substantial acceptance walk-through, submit for review a final set of as-built mylars and an AutoCAD disk copy.
 13. Dimensions, from two permanent points of reference (building corners, sidewalk, road intersections or permanent structures), location of following items:
 - (a) Point of connection to existing water lines.
 - (b) Backflow Preventers.
 - (c) Routing of pressure lines (dimension maximum 100 feet along routing).
 - (d) PVC lateral lines
 - (e) Drip line flush end caps.
 - (f) Irrigation controllers.
 - (g) Control valves.
 - (h) Grounding locations
 - (i) Control wire and communication cable splices.
 - (j) Control wire routing if not with pressure mainline.
 - (k) Gate valves.
 - (l) Locations of all sleeving including size, quantity and depth of sleeve
 14. Owner's Representative will not certify any pay request submitted by the Contractor if the as-built drawings are not current, and processing of pay request will not occur until as-builts are up-dated.
- I. Operation Instructions
1. Submit 3 written operating instructions including winterization procedures and start-up, with cut sheets of products, and coordinate controller/watering operation instruction with maintenance personnel.
- J. Controller Charts:
1. Do not prepare charts until Consultant has reviewed record (as-built) drawings.
 2. Provide one controller chart for each automatic controller installed.
 3. Chart may be reproduction of record drawing, if scale permits fitting of controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility.
 4. Chart shall be a print of actual "as-built" system, showing area covered by that controller.
 5. Identify area of coverage of each remote control valve, using a distinctly different color drawing over entire area of coverage.
 6. Following review of charts by Consultant, they shall be hermetically sealed between two layers of 20-mm thick plastic sheet
 7. Charts shall be completed and reviewed prior to final review of irrigation system.

DELIVERY, STORAGE, AND HANDLING

- K. Deliver, unload, store, and handle materials, packaging, bundling, products in dry, weatherproof, condition in manner to prevent damage, breakage, deterioration, intrusion, ignition, and vandalism.
- L. Deliver in original unopened packaging containers prominently displaying manufacturer's name, volume, quantity, contents, instructions, and conformance to local, state, and federal law.
- M. Remove and replace cracked, broken, or contaminated items or elements prematurely exposed to moisture, inclement weather, snow, ice, temperature extremes, fire, or jobsite damage.
- N. Exercise care in handling, loading and storing, of PVC pipe.
- O. All PVC pipe shall be transported in a vehicle that allows length of pipe to lie flat so as not to subject it to undue bending or concentrated external loads.

- P. All sections of pipe that have been dented or damaged shall be discarded, and if installed, shall be replaced with new piping.

JOBSITE CONDITIONS

- Q. Protection of Property
 - 1. Preserve and protect all trees, plants, monuments, structures, and paved areas from damage due to Work of this Section.
 - 2. In the event damage does occur, all damage to inanimate items shall be completely repaired or replaced to satisfaction of Owner, and all injury to living plants shall be repaired by Owner. All costs of such repairs shall be charged to and paid by Contractor.
 - 3. Protect buildings, walks, walls, and other property from damage.
 - 4. Flare and barricade open ditches.
 - 5. Damage caused to asphalt, concrete, or other building material surfaces shall be repaired or replaced at no cost to Owner. Restore disturbed areas to original condition.
- R. Protection and Repair of Underground Lines
 - 1. Request proper utility company to stake exact location (including depth) of all underground electric, gas, or telephone lines. Take whatever precautions are necessary to protect these underground lines from damage.
 - 2. If damage does occur, Utility Owner shall repair all damage. Contractor shall pay all costs of such repairs unless other arrangements have been made.
 - 3. Request Owner, in writing, to locate all private utilities (i.e., electrical service to outside lighting) before proceeding with excavation. If, after such request and necessary staking, private utilities that were not staked are encountered and damaged by Installer, Owner shall repair them at no cost to Installer.
 - 4. If Contractor damages staked or located utilities, they shall be repaired by Utility Owner at Contractor's expense unless other arrangements have been made.
- S. Replacement of Paving and Curbs
 - 1. Where trenches and lines cross existing roadways, paths, curbing, etc., damage to these shall be kept to a minimum and shall be restored to original condition.

WARRANTY/GUARANTY

- T. Manufacturer shall warrant materials against defects for the period outlined within the landscape specifications or one year from date of Initial Acceptance (whichever is a greater time period). Installer(s) shall guaranty workmanship for similar period.
 - 1. Settling of backfilled trenches that may occur during warranty period shall be repaired at no expense to Owner, including complete restoration of damaged property.
 - 2. Expenses due to vandalism before substantial completion shall be borne by Contractor.
 - 3. Owner will maintain turf and planting areas during warranty period, so as not to hamper proper operation of irrigation system.

MAINTENANCE

- U. Furnish the following maintenance items to Owner prior to final Acceptance
 - 1. Two valve keys for operation of gate valves.
 - 2. Two keys for each irrigation controller.
- V. Winterization
 - 1. Include cost in bid for winterizing complete system at conclusion of the irrigation season (in which

- system received initial acceptance) within 3 days notification by the Owner.
2. System shall be voided of water using compressed air or similar method reviewed by Consultant.
3. Reopen, operate, and adjust system malfunctions accordingly during April of following season within 3 days of notification by Owner.

EXTRA STOCK

- W. In addition to installed system furnish the following items to Owner:
- X. 30 Drip emitters of each type used.
- Y. 10 Spray bodies of each type used.
- Z. 10 Spray nozzles of each type used.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General Piping:
 1. Pressure Supply Line (from point of connection through backflow prevention unit) - Type "K" Hard Copper (3/4" – 2 1/2").
 2. Pressure Supply Lines (downstream of backflow prevention units) - Class 200 PVC BE (1" - 2 1/2").
 3. PVC Sleeving - Class 160 PVC.
 4. Drip Laterals - Class 200 PVC BE (1" - 2 1/2").
 5. Emitter Distribution Tubing - As recommended by emitter manufacturer.
- B. Copper Pipe and Fittings:
 1. Copper Pipe - Type K, hard tempered.
 2. Fittings - Wrought copper, solder joint type.
 3. Joints - Soldered with solder, 45% silver, 15% copper, 16% zinc, and 24% cadmium and solidus at 1125~F and liquids at 1145~F.
- C. Brass Pipe and Fittings
 1. Brass Pipe - 85% red brass, ANSI Schedule 40 screwed pipe.
 2. Fittings - Medium brass, screwed 125-pound class.
- D. Plastic Pipe and Fittings
 1. Identification Markings - Identify all pipe with following indelible markings:
 - (a) Manufacturer's name.
 - (b) Nominal pipe size.
 - (c) Schedule of class.
 - (d) Pressure rating.
 - (e) NSF (National Sanitation Foundation) seal of approval.
 - (f) Date of extrusion.
 2. Solvent Weld Pipe - Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM D1784; cell classification 12454-B, Type 1, Grade 1.
 - (a) Fittings - Standard Wright, Schedule 40, injection molded PVC; complying with ASTM D1784 and D2466, cell classification 12454-B.
 - (b) Threads - Injection molded type (where required).
 - (c) Tees and ells - Side gated.
 - (d) Threaded Nipples - ASTM D2464, Schedule 80 with molded threads.

- (e) Teflon Tape – All PVC male threaded fittings and nipples, excluding marlex fittings, shall receive wrapping of Teflon tape applied to threaded surfaces per pipe manufacturer's recommendations. Three wraps maximum.
 - (f) Joint Cement and Primer - Type as recommended by manufacturer of pipe and fittings.
- E. Drip Irrigation Systems
- 1. Wye Strainer
 - (a) Plastic construction with 150 mesh nylon screen and 1/2 inch blowout assembly.
 - 2. Control Valve
 - (a) 2 way, solenoid pilot operated type made of synthetic, non-corrosive material; diaphragm activated and slow closing. Include freely pivoted seat seal; retained (mounted) without attachment to diaphragm.
 - 3. Pressure Reducing Valve
 - (a) Plastic construction as detailed.
 - 4. Emitters
 - (a) Single port, pressure compensating, press on barbed connection type.
 - (b) Multiple port, pressure compensating, threaded connection type.
- F. Gate Valves
- 1. Gate Valves for 3/4 inch through 2-1/2 Inch Pipe - Brass construction; solid wedge, IPS threads, and non-rising stem with wheel or cross square nut operating handle.
- G. Valve Boxes
- 1. Gate Valves, Quick Coupling Valves, Drain Valves, Drip Line Flush End Caps, and Wire Splice or Stub Box - Carson Brooks #910-10, box as detailed.
 - 2. 1 inch Control Valves and Communication Cable Splice box - Carson Brooks #1419-12 box as detailed.
 - 3. Drip Valve Assemblies - Carson Brooks #1220-12 box as detailed.
- H. Electrical Control Wiring
- 1. Low Voltage:
 - (a) Electrical Control Wire - AWG UFUL approved 14ga min. ul approved twisted wire in high density polyethylene sheath or larger, if required to operate system as designed.
 - (b) Use ul approved wire stripper for all splices
 - (c) Control Wire connections and splices shall be made with 3M DBY direct bury splice as per the manufacturer's specifications.
- I. Automatic Controller
- 1. Size and types shown on Drawings; mounted as detailed.
- J. Backflow Preventer
- 1. Size and type shown on Drawings; installed to meet all local code requirements.

PART 3 - EXECUTION

SITE CONDITIONS, LANDSCAPE PLAN REVIEW AND COORDINATION

- A. Contractor will be held responsible for coordination between landscape and irrigation system installation.
- B. Landscape material locations shown on the Landscape Plan shall take precedence over the irrigation system equipment locations.

- C. If irrigation equipment is installed in conflict with the landscape material locations shown on the Landscape Plan, the Contractor will be required to relocate the irrigation equipment, as necessary, at Contractor's expense.
- D. Contractor is responsible to notify Consultant of any field conditions that vary from the conditions shown on the Irrigation Construction Documents.
- E. If Contractor fails to notify Consultant of these conditions, Contractor will be held responsible for all costs associated with system adjustments required due to the change in field conditions.

STATIC PRESSURE VERIFICATION

- F. Contractor shall field verify the static pressure at the project site, prior to commencing work or ordering irrigation materials, and submit findings, in writing, to Consultant.
- G. If Contractor fails to verify static water pressure prior to commencing work or ordering irrigation materials, Contractor shall assume responsibility for all costs required to make system operational and the costs required to replace any damaged landscape material. Damage shall include all required material costs, design costs and plant replacement costs.

INSPECTION

- H. Examine areas and conditions under which Work of this Section is to be performed. Do not proceed with Work until unsatisfactory conditions have been corrected.
- I. Grading operations, with the exception of final grading, shall be completed and approved by Owner before staking or installation of any irrigation system begins.
- J. Underground Utilities shall be installed prior to installation of irrigation system. If irrigation installation takes place prior to utility installation, Contractor shall notify Owner of this condition in writing prior to commencement of irrigation installation.

PREPARATION

- K. Staking shall Occur as Follows:
 - 1. Mark routing of pressure supply line lateral lines and valve locations. Contact Consultant 48 hours in advance and request review of staking. Proposed locations of all trees shall be field staked by Contractor and approved by Owner/Landscape Architect prior to Consultant review of irrigation staking. Consultant will advise installer as to the amount of staking to be prepared. Consultant will review staking and direct changes if required. Review does not relieve installer from coverage problems due to improper placement of heads after staking.
 - 2. Contractor shall contact Consultant if field spacing varies by +/- 10% of the spacing shown on the irrigation plans. If Contractor fails to notify Consultant of variances exceeding 10%, Contractor assumes full responsibility for the costs associated with any required system modifications deemed necessary by the Consultant or Owner.
 - 3. If Project has significant topography, freeform planting beds, or other amenities, which could require alteration of irrigation equipment layout as deemed necessary by Consultant, do not install irrigation equipment in these areas until Consultant has reviewed equipment staking.
- L. Sleeving
 - 1. Install sleeving under asphalt paving and concrete walks, prior to concrete and paving operations, to accommodate piping and wiring. Compact backfill around sleeves to 95% Modified Proctor Density within 2% of optimum moisture content in accordance with STM D1557.

- M. Trenching
1. Trench excavation shall follow, as much as possible, layout shown on Drawing. Dig trenches straight and support pipe continuously on bottom of trench. Trench bottom shall be clean and smooth with all rock and organic debris removed.
 2. Clearances:
 - (a) Piping Smaller than 3 Inches - Trenches shall have a minimum width of 7 inches.
 - (b) Line Clearance - Provide not less than 6 inches of clearance between each line and not less than 12 inches of clearance between lines of other trades.
 3. Pipe and Wire Depth:
 - (a) Pressure Supply Piping - 24 inches from top of pipe.
 - (b) PVC Sleeving – To match depth of sleeved material.
 - (c) Control Wiring/Communication Cable - Side of pressure main or at 18 inch depth if installed in a separate trench with no mainline piping.
 - (d) Drip Lateral - 12 inches from top of pipe.
 - (e) Emitter Tubing (Micro-tubing) - 8 inches from top of pipe.
 4. Boring will be permitted only where pipe must pass under obstruction(s) which cannot be removed. In backfilling bore, final density of backfill shall match that of surrounding soil. It is acceptable to use sleeves of suitable diameter installed first by jacking or boring, and pipe laid through sleeves. Observe same precautions as though pipe were installed in open trench.

INSTALLATION

- N. Locate other equipment as near as possible to locations designated. Consultant shall review deviations prior to installation.
- O. PVC Piping
1. Snake pipe in trench as much as possible to allow for expansion and contraction. Do not install pipe when air temperature is below 40 degrees F. When pipe installation is not in progress, or at end of each day, close pipe ends with tight plug or cap. Perform Work in accordance with good practices prevailing in piping trades.
 2. Solvent Weld PVC Pipe - Lay pipe and make all plastic to plastic joints in accordance with manufacturer's recommendations.
- P. Control Wiring:
1. Low Voltage Wiring:
 - (a) Bury control wiring between controller and electric valves in pressure supply line trenches, strung as close as possible to main pipe lines with such wires to be consistently located below and to one side of pipe, or in separate trenches.
 - (b) Bundle all 24 volt wires at 10 foot intervals and lay with pressure supply line pipe to one side of the trench.
 - (c) Make all splices and control valve connections using two- wire decoders with 3M DBY direct bury splice per the manufacturer's specifications.
 - (d) Install all control wire splices not occurring at control valve in a separate splice valve box.
- Q. Automatic Controller:
1. Install controller in accordance with manufacturer's instructions as detailed and where shown on Drawings.
 2. Connect control valves to controller in numerical sequence as shown on Drawings.
 3. Owner shall approve final location of controller prior to installation.
 4. All above ground conduit shall be rigid galvanized with appropriate fittings. All below ground conduit shall be schedule 40 PVC or per local code.

- R. Electric Control Valves
 1. Install cross-handle four inches below finished grade where shown on Drawings as detailed.
 2. When grouped together, allow minimum of 12 inches between valve box sides. Install each remote control valve in a separate valve box.
 3. Install valve box flush with grade or when present flush with surfacing material. When parallel to roadway, sidewalk or other permanent element or structure, control valve and box to be installed perpendicular to element or structure, spaced equally.

- S. Drip Emitters
 1. Stake all surface emitters as detailed and staked with acceptable tubing stakes.

- T. Valve Boxes
 1. Install one valve box for each type of valve installed as detailed.
 2. Install gravel sump after compaction of all trenches. Place final portion of gravel inside valve box after valve box is backfilled and compacted.
 3. Brand controller letter and station number on lid of each valve box. Letter and number size shall be no smaller than 1 inch and no greater in size than 1 1/2 inches. Depth of branding shall be no more than 1/8 inch into valve box lid.

- U. Gate Valves
 1. Install where shown on Drawings as detailed.

- V. Backflow Preventer
 1. Size and type shown on Drawings; installed to meet all local code requirements.

- W. Backfilling
 1. Do not begin backfilling operations until required system tests have been completed. Backfill shall not be done in freezing weather except with review by Consultant. Leave trenches slightly mounded to allow for settlement after backfilling is completed. Trenches shall be finish graded prior to walk-through of system by Consultant.
 2. Excavated material is generally considered satisfactory for backfill purposes. Backfill material shall be free of rubbish, vegetable matter, frozen materials, and stones larger than 1 inch in maximum dimension. Do not mix subsoil with topsoil. Material not suitable for backfill shall be hauled away. Contractor shall be responsible for providing suitable backfill if excavated material is unacceptable or not sufficient to meet backfill, compaction, and final grade requirements.
 3. Do not leave trenches open for a period of more than 48 hours. Open excavations shall be protected in accordance with OSHA regulations.
 4. Compact backfill to 90% maximum density, determined in accordance with ASTM D155-7 utilizing the following methods:
 - (a) Mechanical tamping.
 - (b) Puddling or ponding. Puddling or ponding and/or jetting is prohibited within 20'-0" of building or foundation walls.

- X. Piping Under Paving
 1. Provide for a minimum cover of 18 inches between the top of the pipe and the bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete or concrete paving.
 2. Piping located under areas where asphalt or concrete paving will be installed shall be bedded with sand (a layer 6" below pipe and 6" above pipe).
 3. Compact backfill material in 6" lifts at 90% maximum density determined in accordance with ASTM D155-7 using manual or mechanical tamping devices.
 4. Set in place, cap, and pressure test all piping under paving, in presence of Owner prior to backfilling

- and paving operations.
5. Piping under existing walks or concrete pavement shall be done by jacking, boring, or hydraulic driving, but where cutting or breaking of walks and/or concrete is necessary, it shall be done and replaced at not cost to Owner.
 6. Obtain permission to cut or break walks and/or concrete from Owner.
 7. Water Supply and Point of Connection - Water supply shall be extended as shown from water supply lines.

FIELD QUALITY CONTROL

- A. Flushing
 1. After piping, risers, and valves are in place and connected, but prior to installation of quick coupler assemblies, thoroughly flush piping system under full head of water pressure from dead end fittings. Maintain flushing for 5 minutes through furthest valves. Cap risers after flushing.
- B. Pressure Testing
 1. Conduct test in presence of Consultant. Arrange for presence of Consultant 48 hours in advance of testing. Supply force pump and all other test equipment. Compressed air shall not be used for pressure testing system.
 2. After backfilling, and installation of all control valves, fill pressure supply line with water, and pressurize to 40 PSI over the designated static pressure or 120 PSI, whichever is greater, for a period of 2 hours.
 3. Leakage, Pressure Loss - Test is acceptable if no loss of pressure is evident during the test period.
 4. Detect and repair leaks.
 5. Retest system until test pressure can be maintained for duration of test.
 6. Before final acceptance, pressure supply line shall remain under pressure for a period of 48 hours.
 7. Pressure test shall be scheduled and passed prior to scheduling of Substantial Completion Walk-through.
- C. Walk-Through for Substantial Completion
 1. Arrange for Consultant's presence 48 hours in advance of walk-through.
 2. Entire system shall be completely installed and operational prior to scheduling of walk-through.
 3. Operate each zone in its entirety for Consultant at time of walk-through and additionally, open all valve boxes if directed.
 4. Generate a list of items to be corrected prior to Final Completion.
 5. Furnish all materials and perform all work required to correct all inadequacies of coverage due to deviations from Contract Documents.
 6. During walk-through, expose all drip emitters under operations for observation by Consultant to demonstrate that they are performing and installed as designed, prior to placing of all mulch material. Schedule separate walk-through if necessary.
 7. Supply Consultant with prints of irrigation as-builts prior to scheduling substantial completion walk-through.
- D. Walk-Through for Initial Acceptance
 1. Arrange for Consultant's presence 48 hours in advance of walk-through.
 2. Show evidence to Consultant that Owner has received all accessories, charts, record drawings, and equipment as required before Initial Acceptance walk-through is scheduled.
 3. Operate each zone, in its entirety for Consultant at time of walk-through to insure correction of all incomplete items.
 4. Items deemed not acceptable by Consultant shall be reworked to complete satisfaction of Consultant.
 5. If after request to Consultant for walk-through for Initial Acceptance of irrigation system, Consultant

finds items during walk-through which have not been properly adjusted, reworked, or replaced as indicated on list of incomplete items from previous walk-through, Contractor shall be charged for all subsequent walk-throughs. Funds will be withheld from final payment and/or retainage to Contractor, in amount equal to additional time and expenses required by Consultant to conduct and document further walk-throughs as deemed necessary to insure compliance with Contract Documents.

E. Final Acceptance Walk-Through

1. Arrange for Owner's Representative presence seven (7) days in advance of walk-through two (2) weeks prior to the Warranty Period ending.
2. Show evidence that Owner's Representative has received all accessories, charts, record drawings, equipment, operational manuals and warranties as required before Final Completion Walk-through is scheduled.
3. Operate each zone, in its entirety for Owner's Representative at time of walk-through to ensure correction of all incomplete items.
4. Items deemed not acceptable by Owner's Representative shall be resolved to the complete satisfaction of Owner's Representative.
5. If, after request to Owner's Representative for the Final Completion Walk-through of the irrigation system, the Owner's Representative finds items during the walk-through which have not been properly adjusted, reworked, or replaced as indicated on list of incomplete items from previous walk-through, Contractor shall be charged for all subsequent walk-throughs. Funds will be withheld from Final Payment and/or retainage to Owner's Representative, in amount equal to additional time and expenses required by Owner's Representative to conduct and document further walk-throughs as deemed necessary to ensure compliance with Contract Documents

F. ADJUSTING

1. Upon completion of installation, fine-tune entire system by adjusting and setting pressure reducing valves at proper and similar pressure to provide optimum and efficient coverage.
2. If it is determined that irrigation adjustments will provide proper coverage, and improved water distribution as determined by Consultant, contractor shall make such adjustments prior to Final Acceptance, as directed, at no additional cost to Owner.
3. Areas which do not conform to designated operation requirements due to unauthorized changes or poor installation practices shall be immediately corrected at no additional cost to the Owner.

G. CLEANING

1. Maintain continuous cleaning operation throughout duration of work. Dispose of, off-site at no additional cost to Owner, all trash or debris generated by installation of irrigation system.

PART 2 - MAINTENANCE

IRRIGATION SYSTEM MAINTENANCE

- A. Maintenance shall be performed as outlined below for the period outlined within the Landscape Specification and project General Conditions.
1. Maintenance Contractor shall coordinate controller programming with outdoor activities as directed by Owner.
 2. Maintenance Contractor shall repair or replace irrigation equipment damaged during normal use of irrigation equipment.
 3. Operate and visually check all zones of the irrigation system weekly to assure all control valves and emitters are operating properly, and that no leaks are visible which may require repair. Open all controller enclosures and visually check condition. Clean as necessary.

4. Work with Owner's representative and consultants to establish proper application rates and scheduling of irrigation system to ensure maximum watering efficiency. Adjust scheduling of system throughout watering season to adjust for fluctuations in evapotranspiration rate, (every 30 days - minimum).
5. Walk through all planting beds with drip irrigation and check for any visible signs of stress in any plant material. If stressed plant material is located, check for proper operation of drip system and repair as necessary. Notify landscape contractor immediately. Irrigation contractor shall also look for visible signs of disturbance in planting beds and verify proper operation of drip system.
6. Check all filters on drip valve assemblies as necessary (every 30 days - minimum) and clean.
7. Contractor shall be responsible for complete winterization of system. Winterization of system shall include voiding all lines of water using compressed air or similar method approved by Owner's authorized representative. Contractor shall reopen and start up system in the spring and make any adjustments to system as necessary for proper operation. Should it become necessary to irrigate during the winter months as a result of a lack of natural precipitation and moderate temperatures, the Contractor shall take whatever measures are required to provide required water to all plantings and turf. If it is decided by Contractor to activate irrigation system at any time during the winter months, he shall also be required to, again, properly winterize system.
8. Owner shall assume no responsibility for plant material which is damaged or stressed in any way, as a result of lack of or too much water during the maintenance period.

END OF SECTION

SECTION 029005

GENERAL LANDSCAPE

PART 1 - GENERAL

1.01 SUMMARY

- A. This section covers work necessary for installing the landscape and plant materials as indicated on the Construction Documents and details in accordance with the Contract Documents.

1.02 DESCRIPTION OF WORK

- A. The work shall include, but is not limited to, supply all trees, shrub, cacti and all plant materials (nursery stock), labor, material procurement, equipment, tools, transportation protection, and services required for complete installation of landscape and plant materials as indicated or reasonably implied on the Construction Documents and/or specified herein.
- B. Contractor shall retain a copy of the Construction Documents on the project site until final project acceptance.
- C. If any discrepancies exist between the plans and the specifications, the specifications will prevail.
- D. Contractor shall be responsible for obtaining all necessary permits required for installation of landscape.

1.03 RELATED SECTIONS

- A. Examine all sections related to the project work.

1.04 REFERENCES

- A. American Nursery and Landscape Association (ANLA) American Standard for Nursery Stock ANSI Z60.1-2004 May 12, 2004 (Approved by American National Standards Institute, ANSI).
- B. Arizona Nursery Association Grower's Committee Recommended Average Tree Specifications, August 2005.
- C. U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act and equal in quality to standards for Certified Seed.
- D. Federal Specifications (FS): FS O-F-241 (Rev D) Fertilizers, Mixed, Commercial.
- E. American Joint Committee on Horticulture Nomenclature.

1.05 DEFINITIONS

- A. Subgrade: The final elevation of material supporting additional material above it.
- B. Finished Grade: The final elevation of the uppermost surface material (sod shall be top of thatch layer.)

1.06 SUBMITTALS

- A. Product Data
 - 1. Submit product data sheets for each of the following items. Submittals must be made prior to commencing any activities. Make all submittals at one time. No submittals will be reviewed until the entire package has been provided for review. Finished work shall match approved samples.
 - (a) Plant Material Availability
 - (b) Plant substitutions
 - (c) Plant material delivery schedule
 - (d) Construction schedule
 - (e) Supplier List
 - (f) Soil Amendments

- (g) Soil mix
- (h) Imported Topsoil
- (i) Fertilizers
- (j) Gravel or Rock
- (k) Decomposed Granite
- (l) Seed mixes
- (m) Tree ties and guys
- (n) Other

B. Samples

1. Submit physical samples of each of the aforementioned materials for approval. Applicable samples shall be submitted in a one quart, clear, plastic bag (Ziploc type) or appropriate container. Submittals must be made prior to commencing any activities. All samples shall be clearly labeled with the following information.
 - (a) Project Name
 - (b) Material name as shown on Construction Documents and Specifications
 - (c) Supplier or distributor's name
 - (d) Supplier or distributor's product name and/or order number

C. Substitutions

1. Substitutions must have written approval of Owner's Representative and equal the standard of products specified herein and in the Construction Documents.
2. Installation of approved substitution is Contractor's responsibility. Changes required for installation of approved substitution must be made to the satisfaction of Owner's Representative and without additional cost to Owner.
3. Approval by Owner's Representative of substituted equipment does not waive these requirements.

D. Supplier list

1. The Contractor shall provide the Owner's Representative with a single list of all material suppliers for plant material, and all related landscape and irrigation materials to complete the work in this section and related sections. List must be submitted prior to commencing any activities.

E. Construction Schedule

1. Prior to beginning installation of the landscape, the Contractor is to submit a project construction schedule to the Owner's Representative for approval. The schedule should include the areas and types of construction to be undertaken and the sequence which will be used to accomplish the completion of the project. The construction schedule shall be submitted prior to commencing any activities.

F. Soils Testing

1. The cost of testing shall be the responsibility of the Contractor.
2. Results of the testing shall be submitted to the Owner's Representative.
3. Soil Test Reports
 - (a) Submit soils report for all horticultural soil testing as specified herein to the Owner's Representative.
 - (b) Soil report must include the following: complete fertility analysis (major nutrients and micronutrients copper, zinc, manganese and iron), pH, reverse lime analysis, calcium, magnesium, boron, sodium, potassium, exchangeable (plus soluble) sodium percentage, free lime, nitrate, nitrogen, phosphate, phosphorous, organic content, salts, salinity level by electro-conductivity, plasticity index and particle size gradation, and texture.
4. Soils Testing Agency
 - (a) Soil tests and analyses shall be performed by an approved independent certified agricultural soils testing laboratory.
 - (b) The laboratory shall be responsible for determining the number, location and collection of the soil samples for testing.

- (c) The test results shall determine the acceptability of the soils.
 - (d) The testing laboratory shall suggest ways to amend soil to make it suitable to grow plants.
- G. Certificates for Inspections of Materials
- 1. All plant material shall be inspected and accepted by the owner at the nursery prior to delivery. Notify the Town of Marana Engineer or Landscape Architect 48 hours in advance of any Inspections or Approvals of Landscape Materials. Furnish a certificate with each delivery of material to the site in containers, or in bulk. Certificates shall state source, quantity, or weight, type and analysis, and date of delivery. Deliver all certificates to the Owner's Representative.
 - 2. All State, Federal, or other inspection certificates shall be submitted to the Owner's Representative prior to acceptance of the plant material along with other information showing the source or origin.
 - 3. Current grower or nursery certifications indicating that all contractor supplied plant material is healthy, vigorous, and free from insect pests, plant diseases, and injuries
- H. Contract Closeout Submittals
- 1. Refer to Section 029100 – Landscape Establishment and Maintenance.
 - 2. Operation and Maintenance Manuals
 - (a) At the completion of the work, furnish three (3) copies of written maintenance instructions to the Owner's Representative for maintenance and care of the landscaping. Instructions shall include directions for irrigation, weeding, pruning, fertilization, and spraying, as required for continuous and proper maintenance through a full growing season and dormant period. Contractor shall also furnish three (3) copies of operation manuals for all equipment, provided by the Contractor.
 - 3. Warranty
 - (a) At completion of work, furnish written warranty to the Owner's Representative based on the requirements of this section.

1.07 QUALITY ASSURANCES

- A. Landscape Subcontractor's Qualifications: The work covered under this Section is considered specialty work and the Subcontractor shall have a valid Arizona Business License or he shall employ as a Subcontractor a person or persons holding such a license. Additionally, a minimum of three (3) years' experience performing landscape work of comparable size and scope is required.
- B. Field Conditions
- 1. The Contractor shall conduct a site visit to become familiar the existing site conditions.
 - 2. The Contractor is responsible to inform the Owner's Representative of any discrepancies between the existing site conditions and those on the Construction Documents prior to the start of construction.
 - 3. The Contractor shall determine the requirements for preparation and construction methods appropriate for the soil type and existing site conditions.
- C. Advanced Notices
- 1. The Contractor shall provide the Owner's Representative with the following advanced notices:
 - (a) Notice of product delivery schedules forty eight (48) hours in advance
 - (b) Notice for observation of landscaping layout, plant materials installation and fine grading forty eight (48) hours in advance.
 - (c) Substantial Completion acceptance walk through and the start of the Maintenance Period one (1) week in advance.
 - (d) Final Acceptance observation one (1) week in advance.
 - (e) Notice of Warranty Period expirations, each phase one (1) week in advance.
 - (f) Notice of Final Completion and Owner assumes maintenance of project two (2) weeks in advance.
- D. Obtaining and Analyzing Samples
- 1. The Owner's Representative reserve the right to obtain and analyze samples of any materials for conformity to the requirements specified at any time during the work.
 - 2. The Contractor shall furnish samples upon request by the Owner's Representative.
 - 3. Rejected materials shall be immediately removed from the site at the expense of the Contractor

- E. Observation, Sale and Shipment
 - 1. The Contractor shall comply with all local, state and federal laws pertaining to the observation, sale and shipment of the plant materials.
 - 2. The Owner's Representative may impose additional requirements.
- F. Specifications of Materials
 - 1. Contractor shall furnish specifications of any item to be used on-site upon request by the Owner's Representative.
- G. Soils Testing
 - 1. The cost of testing shall be the responsibility of the Contractor.
 - 2. Results of the testing shall be submitted to the Owner's Representative.
 - 3. Soil Test Reports
 - (a) Submit soils report for all horticultural soil testing as specified herein to the Owner's Representative.
 - (b) Soil report must include the following: complete fertility analysis (major nutrients and micronutrients copper, zinc, manganese and iron), pH, reverse lime analysis, calcium, magnesium, boron, sodium, potassium, exchangeable (plus soluble) sodium percentage, free lime, nitrate, nitrogen, phosphate, phosphorous, organic content, salts, salinity level by electro-conductivity, plasticity index and particle size gradation, and texture.
 - 4. Soils Testing Agency
 - (a) Soil tests and analyses shall be performed by an approved independent certified agricultural soils testing laboratory.
 - (b) The laboratory shall be responsible for determining the number, location and collection of the soil samples for testing.
 - (c) The test results shall determine the acceptability of the soils.
 - (d) The testing laboratory shall suggest ways to amend soil to make it suitable to grow plants.
 - 5. Imported Soils
 - (a) If imported soils are needed, the following tests shall be performed on the on-site and imported soils to ensure both soils have similar characteristics.
 - (b) Soils tests and analysis shall include tests for complete fertility analysis (major nutrients and micronutrients copper, zinc, manganese and iron), pH, reverse lime analysis, calcium, magnesium, boron, sodium, potassium, exchangeable (plus soluble) sodium percentage, free lime, nitrate, nitrogen, phosphate, phosphorous, organic content, salts, salinity level by electro-conductivity, plasticity index and particle size gradation, and texture.
 - (c) Contractor may be directed by the Owner's Representative to provide the amendments at no additional cost to the Owner.
- H. Soil Percolation Testing
 - 1. A test for percolation shall be done to determine positive drainage of plant pits and beds.
 - 2. The Owner's Representative will be notified, in writing, of all soil and drainage conditions detrimental to growth of plant material and shall submit a proposal for correcting the condition.
- I. Soil Amendments
 - 1. Refer to Section 029140 – Fine Grading and Soil Preparation
- J. Fertilizers
 - 1. Refer to Section 029140 – Fine Grading and Soil Preparation
- K. Plant Material Availability
 - 1. The Contractor is responsible for the documentation and verification of the availability of plant material specified on the Construction Documents within thirty (30) days of the date on the Notice to Proceed. Approved documentation from a wholesale nursery will specify the following:
 - (a) Nursery name
 - (b) Nursery location

- (c) Nursery contact information
 - (d) Plant botanical and common name
 - (e) Plant quantities and sizes
- L. Plant Material Quantities
1. Plant quantities shown on the drawing are for reference only. It is the responsibility of the Contractor to furnish the plant quantities and materials necessary to complete the work as indicated on the Construction Documents and shall be of species, kinds, sizes, etc., specified.
- M. Plant Substitutions
1. Plant substitutions shall be requested by the Contractor within thirty (30) days of the date on the Notice to Proceed. No request for substitutions will be accepted after the submittal package has been approved. Refer to Section 013300 – Submittals
- N. Plant Delivery Coordination
1. The Contractor will coordinate all deliveries of plants and other materials covered by this specification.
- O. General Plant Health and Condition
1. Plants shall equal or exceed the measurements specified in the plant list, which are minimum acceptable sizes. Plants shall be measured before pruning with branches in normal position. Any necessary pruning shall be done at the time of planting.
 2. Plants shall be free from pests, eggs, diseases. Plants shall not be root bound, damaged or substandard in any way. All materials to bear original labels.
 3. Plant material shall not exhibit signs of accelerated growth.
 4. Trees
 - (a) Trees shall be well branched, with grafts at ground level and with normal trunks throughout their full height.
 - (b) Trees with weak, thin trunks not capable of supporting themselves when planted will not be approved.
 5. Container stock
 - (a) Container stock will be grown for four (4) months to one (1) year before delivery.
 - (b) The container stock shall not be root bound and have sufficient roots to hold the root ball intact after removal from the container.
 6. The health and vigor of the plant material shall be the sole responsibility of the Contractor.
- P. Plant Acclimation
1. Plant materials shall be acclimated to the Verde Valley environs for not less than eight (8) months prior to planting.
 2. Contractor is responsible for any off-site storage arrangements to meet the acclimation requirement.
 3. Materials stored for acclimation will be available for periodic review by the Owner's Representative.
- Q. Review of Plant Material/Inspection
1. All Plant material shall be subject to review and approval of the Owner's Representative at place of growth and/or upon delivery to the site for conformance with requirements specified. The Owner's Representative reserves the right to reject at any time or place, prior to acceptance, the work and all materials which in the Owner's Representative's opinion fails to meet these specification requirements.
 2. The review/inspection of the plant material is primarily for quality; however, other requirements are not waived even though visual inspection results in approval. Materials may be inspected where growing but inspection at the place of growth shall not preclude the right of rejection at the site.
 3. The review/inspection may be made periodically during installation of materials, at completion, and at the end of warranty periods by the Owner's Representative. Plants shall have a habit of growth that is normal for the species. They shall be healthy, vigorous, and free from insect pests, plant diseases, and injuries. All plant material shall be inspected stock conforming to all State and Federal Regulations.
 4. Such approval will not limit the right of observation and rejection during progress of the work.
 5. Observation and tagging of plant material by the Owner's Representative for design intent purposes

does not necessarily constitute Owner's Representative's approval of the plant material in regards to their health and vigor as specified herein.

6. Tagged material shall be clearly designated to ensure that the proper plants will be delivered to the project site.
- R. On-Site Review of Root Ball
1. The Owner's Representative shall randomly select two plants of each species on-site for review of the root ball. Plants of the same species from different growers shall be considered as separate shipments.
 2. If the Owner's Representative determines the roots do not sufficiently fill the container, or have become overgrown or "rootbound", restricted or are deformed in the containers, all the plants of that species from the same shipment and grower shall be rejected and removed from the site immediately.
 3. The Contractor and or the Contractor's project superintendent will attend all plant inspections. The Contractor shall replace any plants damaged during any inspection at no additional cost to the Owner. The Contractor shall replace all plants rejected by the Owner's Representative at no additional cost to the Owner.
- S. Defective Materials
1. Any plant not conforming to the requirement herein shall be considered defective. All defective plants whether in place or still in the container will be tagged as rejected and immediately removed from the site and replaced with new plants at no additional expense to the Owner.
- T. On-Site Plant Care
1. Upon acceptance of plant delivery, the Contractor will assume full responsibility for the condition, care and protection of the plant material.
 2. The Contractor will provide replacements for plants damaged under his care.
- U. Replacement Plants
1. Replacement plants will be provided in accordance with these Specifications including the warranty provision.
- V. Vandalism
1. The Contractor will not be responsible for malicious destruction of plantings after Final Acceptance of the project. The Contractor will, however, be responsible for replacement of vandalized materials stored but not yet installed, and material vandalized prior to Final Acceptance. All cases of vandalism shall be promptly reported to the Owner's Representative. The Contractor shall inform the Owner's Representative in writing if additional protection must be installed to protect the landscaping from damage after installation.

1.08 DELIVERY, STORAGE, AND HANDLING

A. General Requirements

1. The delivery, storage, handling and transporting of any materials for the project will be in compliance with all Federal, State and Local laws and requirements.

B. Pesticides And Herbicides

1. It is the responsibility of the Contractor to verify current status and delivery, storage, handling and transporting requirements of the materials utilized.
2. The Contractor shall notify the Owner's Representative and obtain prior approval for the use of any chemicals for insect eradication or control and weed eradication or control.
3. The types of insecticides or herbicides to be used and the methods of application will conform to Environmental Protection Agency, and all state and local requirements and labeling instructions.
4. Insecticides and herbicides shall be approved by the Owner's Representative prior to use on the Project.

C. Fertilizer and Amendments

1. Deliver fertilizer to site in original unopened containers bearing the manufacturer's guaranteed chemical analysis, name, trade name, trademark, and conformance to Federal and State laws. Notify

Owner's Representative forty eight (48) hours in advance of delivery so that material may be inspected upon arrival at the job site.

2. Deliver packaged manufactured materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at the site. Provide copies of delivery receipts for materials to be incorporated into the construction to the Owner's Representative as the deliveries are made. Materials to be accounted for shall include (but are not limited to) the following: fertilizers, soil amendments, manure, grass seed, plant tabs, etc.

D. Plant Material

1. The Contractor shall be responsible for obtaining all necessary permits and tags for transporting plant materials on public roads.
2. Plants shall be containerized, properly wrapped and prepared for shipping in accordance with recognized standard practice. The root system shall be kept moist and plants shall be protected from adverse conditions due to climate and transportation at all times including when they are planted
3. Each plant shall be identified by means of a grower's label affixed to the plant. The grower's label shall give the data necessary to indicate conformance to Construction Documents. Durable waterproof labels with water resistant ink which will remain legible for a minimum of sixty (60) days shall be used.
4. Owner's Representative shall be notified a minimum of forty eight (48) hours prior to delivery of plant materials to the site so plant material may be inspected upon arrival at job site.
5. Care shall be taken when working with plants. Plants shall not be dropped, nor shall plants be lifted by the trunk, stems, or foliage. The root ball of the plant shall be natural and intact, and the plant shall be handled by the container at all times. All plants shall be protected at all times from drying out or other injury. Minor broken and damaged roots shall be pruned before planting.
6. Storage and Protection
 - (a) Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than four (4) hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage.
 - (b) Keep root balls moist at all times. Do not allow root balls to dry out.
 - (c) Protect all existing and newly planted trees, shrubs, and groundcover within the areas of construction and related excavation as herein specified. Provide suitable barricades and/or fences as required.
7. The Contractor shall be responsible for repair or replacement of any damaged structures, plants, etc. in which the damage was caused by the planting operations.

E. Acceptance at Site

1. Major damage to any part of the plant or root ball shall be cause for rejection.
2. No container plant shall be accepted if the root ball is broken or the trunk is loose in the root ball or the container.
3. The Contractor shall be responsible for the removal of all unacceptable or rejected plant material immediately from job site. Removal shall be done in a legal manner.

1.09 PROJECT/SITE CONDITIONS

A. The Contractor must examine the sub-grade upon which work is to be performed, verify sub-grade elevations, observe the conditions under which work is to be performed, verify suitability of the soil and notify the Owner's Representative in writing of unsatisfactory conditions. Work shall not proceed until unsatisfactory conditions have been corrected in a manner acceptable to the Owner's Representative. Commencement of work shall mean acceptance of the site conditions.

B. Existing Conditions

1. Any discrepancy between the existing site conditions and the contract documents shall be reported to the Owner's Representative and resolved prior to the start of construction operations.
2. The site shall be provided to the Contractor within ± 0.2 foot of finish grades.
3. Determine location of all existing and proposed underground utilities and perform work in a manner

which will avoid possible damage. Do not permit heavy equipment such as trucks, rollers, or bulldozers to damage utilities. Hand excavate where called for, or as necessary, to minimize the possibility of damage to underground utilities. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned. Any damage to existing or proposed utilities that may result in spite of protective measures must be completely corrected and repaired by the Contractor at no additional cost to the Owner.

4. All scaled dimensions are approximate. Before proceeding with work carefully check and verify all dimensions and quantities; immediately inform the Owner's Representative of any discrepancy between the drawings and/or the specifications and the actual dimensions. No work shall be done in any area where there is such a discrepancy until review and approval for the same has been given by Owner's Representative.
5. Planting areas shall be kept clean, free of any waste or debris.

1.10 SEQUENCING & SCHEDULING

- A. Coordinate the landscape construction with all other trades to ensure that construction is not delayed.
- B. Schedule each type of landscape work required during the normal season for such work in the area of the site. Establish dates for each type of work and establish a completion date. Correlate work with specified maintenance periods to provide maintenance until accepted by the Owner. Do not depart from the accepted schedule, except with written authorization from the Owner's Representative. Submit request to the Owner's Representative for changes in the planting schedule. When delays in the planting schedule are unavoidable, include documentation of the reason for delay.

1.11 ORDER OF COMPLETION

- A. Pre-Substantial Completion Walk-through
 1. A Pre-Substantial Completion Walk-through shall be performed upon acceptance of Substantial Completion of all landscape and irrigation work under this Contract.
 2. A punch list shall be generated by the Owner's Representative in the presence of the Contractor requiring incomplete or unacceptable work to be successfully installed per the work under this Contract.
 3. A final walk through with the Owner's Representative and the Contractor shall occur to review the punch list items to ensure they all have been completed successfully as required per the work under this contract.
 4. At this time the Contractor shall submit Irrigation Record Drawings (As-Builts) for approval by the Owner's Representative per Section 028000 – Irrigation of these specifications.
- B. Substantial Completion
 1. Substantial Completion shall be granted only when one hundred (100) percent of the irrigation system is fully operational and functioning properly and all plantings and landscape materials are installed per the Construction Documents successfully.
 2. Conditional Acceptance shall be provided at the time the Owner's Representative deems the project Substantially Complete.
- C. Plant Establishment/Maintenance Period
 1. The start of the Landscape Establishment/Maintenance Period shall begin after the work recorded on the punch list at the Substantial Completion walk-through and all work in the Construction Documents and under this contract is successfully completed. At this time if it is established that all work under this Contract has been successfully complete acceptance will be provided by the Owner's Representative to the Contractor and the Plant Establishment/Maintenance Period shall begin.
 2. A second Substantial Completion walk-through in the presence of the Contractor shall be conducted to establish compliance with the punch list items generated at the first Substantial Completion walk-through and that all work has been successfully completed as per the work under this Contract.
 3. The length of the Landscape Establishment/Maintenance Period shall be forty two (42) calendar days (six weeks).

4. The schedule of Operations for the Landscape Establishment/Maintenance Period shall include but not limited to the following;
 - (a) Each week the Contractor shall submit a work schedule of operations for approval by the Owner's Representative.
 - (b) Failure to maintain an approved work schedule will result in the extension of the maintenance period for one (1) work day each day until the schedule of operations is submitted and approved by the Owner's Representative.
 5. Maintenance Observations by the Owner's Representative shall occur biweekly during the Landscape Establishment/Maintenance Period.
 - (a) The Contractor shall be present for all observations.
 - (b) The Contractor shall maintain a weekly landscape maintenance log, indicating services performed. Submit copies of the log with each month's pay request.
 - (c) If it is determined that the landscape areas are being improperly maintained, plant replacement shall be required, or other corrective measures shall become necessary. The Contractor shall correct all items in a timely manner at no additional cost to the Owner.
 - (d) Any remedial work shall be completed prior to the next maintenance observation.
 - (e) If the remedial work is not completed in the aforementioned time, the Landscape Establishment/Maintenance Period shall be extended one (1) month, or at the discretion of The Owner's Representative.
 - (f) Monthly payments shall be held until the remedial work is completed.
- D. Final Acceptance Observation
1. The Owner's Representative shall be notified seven (7) days prior to the end of the Landscape Establishment/Maintenance Period that Final Acceptance Observation is requested.
 2. The Owner's Representative shall set the date with Contractor present for Final Acceptance Observation.
 3. A punch list shall be prepared of any plantings or other work in this Specification Section or as a part of this contract that is not acceptable and requires correction.
 4. Contractor will immediately make such corrections.
- E. Notice of Final Acceptance
1. After the Final Acceptance Observation, if the Owner's Representative agrees that all planting areas are weed free and plant materials are in satisfactory growing condition, written Notice of Final Acceptance will be given to the Contractor for landscape installation.
 2. Final written Notice of Acceptance will be granted only after one hundred (100) percent of the items on the Final Acceptance Observation punch list are corrected and accepted by the Owner's Representative.
 3. Owner maintenance shall begin only after the Notice of Final Acceptance for all landscape items is issued.
- F. Additional Observations
1. If additional observations are required to gain Final Acceptance, the Contractor shall be required to pay all consultants and staff fees.
 2. Fees will be deducted from final payment.
- G. Corrective Work
1. Deficiencies in workmanship and installation shall be written up in a corrective work report. Perform work requiring corrective action within fifteen (15) days after the observation.
 2. Corrective work shall be done in accordance with the Contract Documents and at no extra cost to the Owner.
 3. Contractor shall submit, in writing, notice of completion of corrective work

1.12 WARRANTY

- A. The Warranty Period shall begin after:

1. The Irrigation Record As-built Drawings have been received and approved by the Owner's Representative.
 2. The Final Acceptance punch list items have been completed and approved by the Owner's Representative.
- B. The Contractor shall guarantee all trees, shrubs, groundcovers and all plant material for a period of one (1) year from the date of Final Acceptance against defects not resulting from neglect of Owner, or abuse and damage by others. The Contractor shall replace any plants that are dead, unhealthy, unsightly, or that have lost their natural shape due to dead branches or excessive pruning. Inadequate maintenance by the Owner shall not be cause for replacement. All replacement planting is to be done no later than the succeeding season.
- C. Replacement plants shall be of the same variety and size or larger as originally specified in the plant list. Plants shall be planted as originally specified. All areas damaged by planting or replacement operations shall be fully restored to their original condition as specified. Remove all dead or defective plant material from the site immediately.
- D. A one (1) year warranty shall also apply to the plants replaced at the first warranty walk-through.
- E. Salvaged Plants that were transplanted from their original location and placed in a temporary nursery whether boxed or transplanted directly in the native soil shall be guaranteed. Salvaged plants that die during the landscape construction or Plant Establishment/Maintenance Period shall be replaced with plant material of like kind, size and economic value at no additional expense to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Fertilizer
1. Refer to Fine Grading & Soil Preparation Section 029140.
 2. If it is determined by the soil test that the plant material does not need additional fertilization and based on the sole discretion of the Owner's Representative the Agriform Tablets may be eliminated from the contract.
- B. Plant Material
1. General Requirements
 - (a) All plants grown in a nursery will conform to the applicable requirements specified in the current edition of "American Standard for Nursery Stock" ANSI Z60.1 as approved by the American National Standards Institute, Inc., and sponsored by the American Association of Nurserymen, Inc.
 - (b) Botanical plant names will be in accordance with the current edition of "Standard Plant Names" prepared by the American Joint Committee on Horticultural Nomenclature.
 - (c) Plants shall be in accordance with Arizona State Department of Agriculture regulations for nursery observations, rules and ratings.
 - (d) Label each tree and shrub with a securely attached waterproof tag bearing legible designation of botanical and common name and size.
 - (e) The Owner's Representative will be sole judge as to acceptability.
 2. Species, Sizes, Grades, and Condition
 - (a) Requirements for measurements, branching, and quality of plants in the plant list generally follow the code of standards currently recommended by the American Association of Nurserymen, Inc., in the American Standard for Nursery Stock ANSI Z60.1.
 - (b) The size of all plants will correspond to that normally expected for species and variety of commercially available nursery stock as specified in the Construction Documents.
 - (c) Plants shall be equal to or exceed the measurements specified in the plant list, which are minimum acceptable sizes.

- (d) Plants shall be nursery grown under climatic conditions similar to those in the Verde Valley, Arizona. Grower's certificates may be required when doubt exists as to the origin of the plant material.
 - (e) Plants shall be container grown or established "boxed out" field grown plant material unless otherwise specified.
 - (f) Established container stock is defined as a tree, shrub or groundcover grown from seed or transplanted into a container for a length of time sufficient to develop new fibrous roots so that the root mass will retain its shape and hold together when removed from the container.
 - (g) Container stock shall be grown in containers for at least four (4) months and shall not be root bound. No bare root or recently containerized stock will be accepted.
 - (h) Container plants with cracked or broken balls or earth when taken from the containers may only be planted with specific approval of the Owner's Representative.
 - (i) Plant material containers shall be sufficiently rigid to retain the root ball shape and protect the root mass during shipping.
 - (j) Protect all plant material in transit and after delivery to the project site. Plants in broken containers and plants with broken branches or injured trunks will be rejected. Remove rejected material from the site immediately.
 - (k) Plants, including their containers, will be free of noxious weeds including Bermuda grass and Buffleggrass.
 - (l) Flat grown plant material shall be rooted full and compact, and shall not be leggy.
 - (m) All plants shall have a normal growth habit for each respective species and will be sound, healthy, vigorous and free from plant disease, insect pests or their eggs, fresh bark abrasions, excessive abrasions or other objectionable disfigurements.
 - (n) Where formal arrangements or consecutive order of plants are shown, select stock for uniform height and spread, and label with numbers (if necessary) to ensure symmetry in planting.
 - (o) At no time will tree or plant materials be pruned, trimmed, or topped prior to delivery and any alteration of their shape will be conducted only with the approval of and as directed by the Owner's Representative.
3. Plant Material Substitutions
- (a) Plants larger than specified in the plant list may be used if approved by the Owner's Representative but use of such plants will not increase the contract price.
 - (b) If use of larger plants is approved, the root ball will be increased in proportion to the size of the plant.
 - (c) Under no conditions will there be any substitutions of plants or sizes listed on the drawings, except with written approval from the Owner's Representative.
 - (d) The Owner's Representative shall consider plants of other kinds than those indicated on the plant list only upon submission of proof that the specified plant is not reasonably procurable in the local region.
 - (e) Replacement plants shall be approved on the grounds that it resembles the plant specified in regards to appearance, ultimate height, shape, habit of growth, general soil and other requirements.
 - (f) In no case shall the average cost and value of the substituted plants be less than the cost and value of plants indicated.
 - (g) All proposed plant substitutions due to unavailability shall be requested in writing for approval by the Owner's Representative prior to the confirmation of ordering.
 - (h) Should the Contractor not secure plant materials and materials become unavailable at time of installation, the Contractor shall install larger container size of equal plant variety at no additional cost to the Owner.
4. Trees
- (a) Height of branching should bear a relationship to size and variety of tree specified and with the crown in good balance with the trunk and trunk caliper as recommended by ANSI Z60.1.
 - (b) Trees shall not be "poled" or have the leader removed.

- (c) Single trunk plants shall be reasonably straight and symmetrical with crown according to species and have a persistent main leader.
- (d) Boxed trees shall be harvested and boxed at least ninety (90) days prior to planting.
- (e) Trees in groves shall match in caliper, height, spread and overall form.
- 5. Shrubs and Groundcovers
 - (a) Provide deciduous shrubs with not less than the minimum number of canes required by ANSI Z60.1 for the type and height of shrub specified.
 - (b) Plants furnished in containers shall have been grown in pots, cans, or baskets long enough to have sufficient roots to hold earth together intact after removal from container, without being root bound.
- C. Tree Stakes and Guys
 - 1. Stakes and guys shall only be installed for plant material larger than 24" box container size for a minimum period of one year.
 - 2. Tree stakes shall be two (2) inches dia. x eight (8) feet in length, be sound and knot-free pressure treated Redwood or Lodgepole Pine, uniformly sized, pointed six (6) inches from the end and capable of at least two (2) years ground burial.
 - 3. Guy wire shall be twisted double strand twelve (12) gauge galvanized steel wire. Trunk protective covering shall be three quarter (3/4) inch dia. vinyl two-ply fabric-bearing hose with a six (6) inch to eight (8) inch inside diameter around the tree trunk to allow for natural sway of tree. Install hose and guy so as to not constrict tree trunk and per Construction Documents.
- D. Weed Control
 - 1. Pre-Emergent Herbicide: Elanco Mfg. Co. "Surflan 75W", or approved equal. Do not apply on areas that receive native seed mix or turf.
 - 2. Herbicide: Monsanto "Round-Up", or approved equal.
- E. Water
 - 1. The water shall be free of oil, acid, salts or other toxic elements.
 - 2. The Owner's Representative shall approve the water source prior to use.
- F. Fencing
 - 1. The Contractor shall provide temporary security fencing for adequate protection of workers, the general public, preserve-in-place vegetation and existing features and structures from construction activities.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Contractor shall inspect the site with the Owner's Representative prior to beginning any activities on site. The Contractor shall provide a written report of any discrepancies that would interfere with their scope of work, or would delay progress on the project.
- B. The Contractor shall verify the location of underground utilities and facilities.
- C. Any damage to any such underground items resulting from work of this Specification Section or under this contract shall be repaired at the Contractor's expense.
- D. Weed Control
 - 1. If live perennial weeds exist on the site at the beginning of the landscaping operation, spray with herbicide according to the manufacturer's instructions and applied by an Arizona licensed herbicide applicator.
 - 2. After allowance of adequate time for systemic kill, clear and remove all dead vegetation and maintain entire site weed-free until Final Acceptance by Owner's Representative using mechanical, manual, and/or chemical treatment.
 - 3. Remove all weeds including Bermuda Grass, Buffleggrass, Johnson Grass and Nut Grass and dispose

of off-site in a legal manner.

3.02 PROTECTIVE FENCING

A. Existing Landscape

1. Provide protective fencing for existing landscaped plants from construction activities per the direction of the Owner's Representative.

B. Prior to Construction

1. The Contractor shall, prior to the start of construction activities on the site, define the limit boundaries of all areas designated as off-limits to the Contractor.

3.03 REMOVAL OF EXISTING MATERIALS

A. General

1. Refer to MAG standards.
2. Items such as abandoned irrigation lines, sleeving, wiring or other used materials shall be disposed of appropriately and in a legal manner off-site.
3. Care shall be taken not to damage existing irrigation system.
4. Damage shall be repaired immediately
5. Damaged and/or modified lines shall be flushed and pressure tested.

B. Tree and Shrub Removal

1. Remove existing trees and shrubs as necessary to execute all aspects of these contract documents and as directed by the Owner's Representative.
2. Prior to construction, remove the entire trunk and root system below grade of the indicated trees and shrubs.
3. Dispose of off-site in a legal manner.
4. Fill the removed tree and shrub plant holes with approved imported soil suitable for plant growth.

3.04 INSTALLATION/APPLICATION

- A. Proceed with and complete the landscape work as rapidly as portions of the site become available, working within the seasonal limitations for each kind of landscape work required.

- B. Coordinate and cooperate with any other Contractors and trades which may be working in and adjacent to the landscape work areas. Examine drawings which show the development of the entire site and become familiar with the scope of all work required. Refer to Section 02800 – Irrigation.

- C. Refer to section 029140 – Fine Grading and Soil Preparation

- D. Refer to section 029220 – Turf Installation by Sodding

E. Existing Plant Materials

1. Any existing plants outside the construction limits that are removed, damaged or destroyed during construction shall be replaced with plants of the same species, size and variety at the Contractor's expense.
2. The Contractor shall be responsible for maintaining all "preserve in place" plants as designated by the Owner's Representative.
3. The Contractor shall provide an adequate water supply to any "preserve in place" plants affected by construction activities.
4. Any plants designated as "preserve in place" that are removed, damaged or destroyed during construction will be replaced with trees and shrubs of the same species, size and variety at the Contractor's expense.

F. Native Plants

1. Protected native plants within the project that have been identified by the Owner's Representative.
2. Plastic tape to correspond to the determinations made in the Native Plant Inventory
 - (a) White tape - Plants to remain in place.

- (b) Red tape - Plants to be moved to another location.
 - (c) Blue tape - Plants to be destroyed.
- 3. The Contractor is responsible for properly marking and protecting preserve-in-place native vegetation.
- G. Removal and Storage of Salvageable Vegetation
 - 1. Salvageable vegetation shall be removed or relocated to an area near the present location as directed by the Owner's Representative.
- H. Pruning of Existing Plant Materials
 - 1. International Society of Arboriculture Certified Tree Worker or Arborist supervising pruning of existing trees and plant material.
 - 2. Existing plant materials adjacent to walkways or within sightlines shall be pruned as part of landscape restoration to provide a minimum seven foot (7') height canopy/branch clearance above walkway surfaces for trees and maximum three foot (3') height for shrubs.
 - 3. All existing shrubs as hedges which exceed the three foot (3') maximum height shall be removed to provide a four foot (4') clearance from the back of all walkways.
 - 4. All plant removal and pruning shall be reviewed and approved with the Owner's Representative prior to beginning any work.
 - 5. Failure to get prior approval may require the Contractor to replace the pruned plant material at no additional cost to the Owner.
- I. Irrigation System
 - 1. No planting shall be done until installation and acceptance by the Owner's Representative of the irrigation system in total or in increments is provided.
 - 2. The initial watering and all subsequent watering of the planting shall be done using the newly constructed irrigation system.
 - 3. Boxed Trees
 - (a) Boxed trees may be placed before irrigation system installation.
 - (b) The Contractor shall transport adequate water to these trees to maintain them in prime condition until the irrigation system is automated.
 - 4. Refer to Section 028000 – Irrigation for additional information.
- J. Layout of Planting Areas
 - 1. The Contractor shall paint or stake the layout of all planting areas and berm locations for approval of the Owner's Representative prior to grading.
 - 2. All planting areas shall be shaped as indicated on the Construction Documents or as directed by Owner's Representative.
- K. Layout of Plant Material
 - 1. Stake location of individual trees, for approval by Owner's Representative, prior to planting or excavating.
 - 2. If a new tree or shrub relocation is necessary due to interference with underground piping or wiring, the Contractor shall notify the Owner's Representative and receive approval of a new plant location prior to installation.
 - 3. The Owner's Representative must approve the precise location of all plants prior to pit excavation and installation.
 - 4. Make minor adjustments as requested by the Owner's Representative, or as necessary to avoid conflicts with sprinkler line locations.
- L. Work Under or Near Existing Vegetation
 - 1. Where landscape operations are to be completed below the canopy spread of existing trees, all work shall be performed by hand or other methods necessary to complete the work and prevent damage to any limbs, branches, trunks or roots.
 - 2. Excavation or trenching below existing trees shown to remain shall be completed providing the greatest allowable distance from the trunk and limited to one side of the tree.

3. Field verify the location or route which shall provide the least disturbance of the root structure.
 4. Roots encountered which are two (2) inches or larger in diameter shall be tunneled or excavated under or around and protected from any damage.
 5. Roots that are less than two (2) inches in diameter shall be cleanly pruned and painted with two coats of standard tree paint or compound prior to backfilling.
 6. No roots shall be left unprotected from damage caused by exposure or loss of moisture.
 7. Notify Owner's Representative for direction if conditions are encountered which may affect trees or landscape installation methods.
- M. Excavation For Planting
1. If rock, underground construction work, or other obstructions are encountered in excavation for planting of trees or shrubs, notify the Owner's Representative. If necessary, new locations may be selected by the Owner's Representative.
 2. Any subsurface obstructions, materials or substances which conflict with or impact the installation of plants or may be detrimental to plant health shall be excavated and removed to a minimum of two times the root ball container depth and four times the root ball container width.
 3. Remove any rock or other underground obstruction, if possible, to the depth necessary to permit proper planting according to the Construction Documents and as specified.
- N. Planting Operations
1. General
 - (a) Do not install plant materials until all construction work has been completed and irrigation system has been installed and tested. Planting areas shall have been graded and prepared as herein specified and shall have been approved by the Owner's Representative.
 - (b) Do not plant during unfavorable weather.
 - (c) Soil shall be at optimum moisture content for planting.
 - (d) Do not lift or handle container plants by tops, stems or trunks at any time.
 - (e) All plants shall be set so that, when settled, natural grade of the container plant shall be as detailed in the Construction Documents.
 - (f) All plants shall be planted immediately after the containers are cut and containers shall be regularly removed from the site so as not to present a hazard to persons using the area.
 - (g) Set plants upright, plumb and faced to give best appearance or relationship to each other or adjacent structure.
 - (h) Set vines as close as possible to the structure and tie to structure. Two (2) ties per vine.
 - (i) Place backfill in six (6) inch lifts, water settle if possible.
 - (j) After planting remove all nursery stakes and tags after inspection and Acceptance of Substantial Completion.
 - (k) Thoroughly water in all planting.
- O. Planting Pits
1. Boxed Trees
 - (a) Boxed material shall be observed by Owner's Representative and approved prior to planting in a new location as shown on the Construction Documents.
 - (b) Width of pit shall be a minimum of two (2) to three (3) times the width of the box size and the depth will be the same as depth of box size or as large as necessary for placement in pit without damage to tree or adjacent structures or existing landscaping.
 - (c) At the Owner's Representative's option, tree pits will be filled with water and must drain completely within twenty-four hours (24) to be acceptable. Pits that do not drain shall receive a drainage chimney. A drainage chimney is twelve inch (12") diameter x twenty four inch (24") deep auger holes (two per tree pit) to be filled with one and one half (1-1/2) inch gravel.
 - (d) Thoroughly mix amendments as required by soils testing.
 2. Container Stock
 - (a) Planting pits shall be approximately circular with diameter two (2) to three (3) times the width and depth at least the height of the plant ball or container.

- (b) If pits are dug with an auger the surface shall be scarified.
- (c) Pits must be large enough to permit handling and planting without injury or breakage of the root ball or root system.
- (d) Thoroughly mix amendments as required by soils testing.
- (e) If soil is added to level or stabilize the plant, the soil shall be compacted to avoid settlement after planting.
- (f) Plants shall not be allowed to stand in these pits without watering.

P. Moving Boxed Plants

- 1. Check plant box containers before moving.
- 2. Any box damage that may cause harm to the root ball will be repaired at the Contractor's expense prior to relocation.
- 3. This includes but is not limited to provide new bottoms, side reinforcement, re-banding, box repair or replacement.

Q. Placing Plants

- 1. General
 - (a) Place shrubs no closer than twenty (24) inches from foundations, fences, walls and walks or as far as character of growth demands, whichever is greater, unless directed otherwise by the Owner's Representative.
 - (b) Place trees no closer than six (6) feet to foundations, fences, walls and walks unless directed otherwise by the Owner's Representative.
 - (c) All plants which settle deeper than the surrounding grade shall be rejected and must be raised to correct level.
 - (d) Backfill plants with clean site soil that will be thoroughly settled by watering and tamping to fill all voids. Refer to Section 029140 – Fine Grading and Soil Preparation.
 - (e) Set trees plumb and rigidly brace in position until the soil has been tamped solidly around the ball.
- 2. Boxed Trees
 - (a) Notify Owner's Representative at least two (2) days in advance to secure approval of the equipment to be used for planting.
 - (b) Owner's Representative shall be present at the time the trees are set and positioned in the planting pit.
 - (c) Fill the excavated planting pits half way with water and drain before placing tree in pit. Any drainage problem must be rectified prior to planting the tree.
 - (d) Boxed trees will be carefully lowered into their pits using approved equipment and at no time will be pushed or dropped into pit.
 - (e) Boxed trees thirty (30) inches or greater shall be positioned by crane.
 - (f) Branches and root balls shall not be damaged.
 - (g) Top of root ball at finish grade shall be in accordance with details in the Construction Documents.
 - (h) Add soil backfill under the tree if needed to bring root ball to proper height.
 - (i) Planting pit will be backfilled with clean site soil as box sides are progressively removed to minimize damage to the root ball and to prevent it from collapsing. Refer to Section 029140 Fine Grading and Soil Preparation.
 - (j) Backfill in bottom of planting pit to prevent undue settling.
- 3. Container Stock
 - (a) Unless otherwise specified, place all plants in the center of planting pits, plant upright and face to give the best appearance and relationship to the adjacent plants or structures.
 - (b) Plants will be set in relation to surrounding grade in accordance with the details in the Construction Documents.
 - (c) After removing plant from container, scarify side of root ball to eliminate root bound condition.
 - (d) Do not plant stock if root ball is cracked or broken.
- 4. Watering and Filling
 - (a) Water compact topsoil to the extent approved by the Owner's Representative.

- (b) After settlement, supply additional topsoil as required to make a constant finished in accordance with details in the Construction Documents.
- 5. Staking of Plants
 - (a) Tree stakes shall be two (2) inches in diameter x eight (8) feet in length sound and knot-free pressure treated Redwood or Lodgepole Pine, uniformly sized, pointed six (6) inches from the end and capable of at least two (2) years ground burial.
 - (b) Trees stakes shall be placed on opposite sides of the tree in accordance with details in the Construction Documents.
 - (c) Tree stakes will be driven vertically into firm ground and will not injure the root ball.
 - (d) Provide extra guys if they are needed in the opinion of the Owner's Representative.
 - (e) In accordance with details in the Construction Documents, avoid rigid restraint of tree and allow for trunk movement.
 - (f) All stakes and guys are to be removed from all trees after a period of one year from Project Completion.
- 6. Pruning
 - (a) After planting, prune the plants of superfluous growth as directed by the Owner's Representative.
 - (b) Dead or broken tip growth shall be removed.
 - (c) Typical growth habit of individual plants shall be retained with clean cuts made at the natural growth collar at the base of the branch where it emerges from the parent trunk.
 - (d) "Headback" cuts at right angles to line of growth shall not be permitted.
 - (e) All cuts larger than 3/4-inch diameter will be trimmed back to healthy tissues, smoothed so as not to retain water.
 - (f) Trees shall not be poled or the leader removed, nor shall the leader be pruned or "topped off".
 - (g) Improper cuts, stubs, dead and broken branches shall be removed.
 - (h) All pruned material shall be removed from project site.
 - (i) Pruning tools will be new and of proper size for the cut and maintained with sharp cutting surfaces.
 - (j) Remove and replace excessively pruned or deformed stock resulting from improper pruning.

3.05 FIELD QUALITY CONTROL

- A. When the landscape work is completed, the Owner's Representative shall, upon seven (7) calendar days advance notice, make an inspection of the landscape work to determine if the work is complete and acceptable. The Owner's Representative shall prepare a punch list of items improperly installed, inadequately sized or otherwise deficient based on the findings of his inspection. The punch list shall be completed not more than seven (7) working days after the field inspection. When the Contractor has remedied all deficiencies and completed all items on the punch list, the Contractor shall request another inspection by the Owner's Representative to determine whether the deficiencies have been adequately corrected. Once the punch list items have been corrected and re-inspected, the Owner's Representative shall issue a written certificate to the Owner who will then respond to the Contractor in writing formally accepting the work and beginning the Warranty Period.
- B. Additional landscape inspections shall be conducted upon request by the Owner's Representative, to determine the condition of the work at the completion of the Warranty Period.

3.06 ADJUSTING AND CLEANING

- A. During landscape work, store materials and equipment where directed.
- B. Keep pavements clean and work areas in an orderly condition.
- C. Protect landscape work from loss, damage, and deterioration during storage, installation, and maintenance periods.
- D. Protect from unauthorized persons (trespassers), as well as from operations by other Contractors and tradesmen and landscape operations.
- E. At the time of the final inspection of the work and before the issuance of Final Acceptance, all paved areas

shall be thoroughly cleaned by the Contractor by sweeping, and washing. All construction equipment and excess materials shall have been removed and any debris or rubbish shall have been removed from the site.

END OF SECTION

SECTION 029100

LANDSCAPE ESTABLISHMENT & MAINTENANCE

PART 1 - GENERAL

1.01 SUMMARY

- A. This section covers work necessary for maintaining the landscape amenities as indicated on the Construction Documents and details in accordance with the Contract Documents.

1.02 DESCRIPTION OF WORK

- A. Furnish all supervision, labor, material, equipment, transportation, permits and fees, and perform all operations in connection with and reasonably incidental to maintaining all plantings, seeding and turf included within the area as delineated on the plan and as called for under this Contract for a forty two (42) calendar days (six weeks) Contractor shall retain a copy of the Construction Documents on the project site until final project acceptance.
- B. These specifications are intended as a guideline for contractors to develop their maintenance schedules for the duration of the Landscape Establishment Maintenance Period. Work will be inspected on the overall performance, rather than strict conformance with the Specifications. The Owner's Representative will monitor work at biweekly intervals to ensure that the landscape is well manicured, free of weeds, properly watered, dead material is removed or replaced, and the overall appearance of the site is acceptable to the owner. The Contractor shall be present for all of the Owner's Representative maintenance observations.
- C. These guidelines are minimum expectations of the Contractor. Maintenance obligations during the Landscape Establishment Maintenance Period are anticipated to be more involved on the part of the Contractor.
- D. The Contractor is responsible for all elements that may be included in maintaining the property. These elements will include but are not limited to aeration, fertilizing, mowing, trimming, blowing sidewalks and street curbs, keeping log books, replacements of trees and shrubs, clean up, weeding, insect and disease control, etc. It is the responsibility of the Contractor to utilize all measures to maintain this property at a high level.
- E. The following areas shall have an appearance as described below, immediately after each plant or turf area is installed, at all times during the Landscape Establishment Maintenance Period. Some of the elements listed may not occur within this project.
 - 1. Planting Areas
 - (a) Continuous operations of watering, weeding, cultivating, trimming, mowing, edging, rolling, fertilizing, spraying, insect, pest, fungus and rodent control, and any other operations to ensure good normal growth.
 - (b) All planting areas shall be weed free. Decomposed granite and or screened rock should be raked, redistributed, or replenished to maintain a depth outlined in Construction Documents.
 - (c) Dead plant material should be removed or replaced, as indicated by Owner's Representative.
 - (d) All perennials and annuals should be dead headed on a regular basis to promote further flowering, and have a neat, well kept appearance.
 - 2. Sod areas
 - (a) Refer to Section 029220 – Refer to Turf by Sodding
 - 3. Seeded areas (dryland seed mix)
 - (a) This includes all areas within the limits of work that are irrigated, non-irrigated, recently planted, or well established. Contractor should monitor these areas on a regular basis for the presence of weeds and percentage of germination/coverage.
 - (b) Areas will require individual attention and separate maintenance schedules, thus the Contractor is responsible for developing and sustaining a weed-free, lush stand of native plant material.

- (c) Chemical, mechanical, or manual methods should be implemented to prevent the spread of weeds. Contractor will be expected to re-seed or over-seed areas as bare spots develop.

1.03 QUALITY ASSURANCE:

- A. The Contractor is responsible protect all improvements installed as a part of the Contract against damage from pedestrian and vehicular traffic, vandalism or malicious destruction until Final Acceptance is provided in writing by the Owner's Representative (not including Warranty Period).
- B. Contractor shall maintain a weekly landscape maintenance log, indicating services performed. Submit copies of the log with each month's pay request.
- C. Contractor shall submit a sample of the form used to log work. Owner's Representative must approve the format for logging work. All maintenance logs will be entirely completed and in a uniform format. Contractor shall maintain originals of the maintenance logs in a bound format. The Owner's Representative will be sent a copy of the logs for the month prior to the Contractor submitting the pay request.
- D. Contractor shall use the pay request form approved by the Owner's Representative in preparing monthly pay submittals.
- E. Contractor shall assume all responsibility for plant material or turf which is damaged or stressed in any way as a result of poor maintenance. Contractor will assume all cost associated with replacement of damaged plant material.

PART 1 - PRODUCTS

- A. Materials used for maintenance shall be supplied by Contractor unless otherwise specified.
- B. Any replacement plant materials shall conform to the sizes identified in the supplemental unit prices.
- C. Any replacement non-organic landscape materials shall conform to the type, size and condition of the material being replaced.

PART 2 - EXECUTION

2.01 TREE MAINTENANCE

- A. Pruning
 - 1. Fall planted trees shall not be pruned until one year after planting, except to remove broken or weak branches.
 - 2. Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or forty eight (48) inches and radial orientation so as not to overlay one another; to eliminate diseased or damaged growth; to eliminate narrow V-shaped branch forks that lack strength; to reduce toppling and wind damage by thinning out crowns; to maintain growth within space limitations; to maintain a natural appearance; to balance crown with roots.
 - 3. Stripping of lower branches ("raising up") of young trees shall be permitted unless directed by the Owner's Representative.

2.02 SHRUBS, GROUND COVERS, ORNAMENTAL GRASSES, AND FLOWERS

- A. Pruning
 - 1. Prune shrubs and ground covers by hand to maintain a natural appearance. There are no plantings in which shearing is intended.
 - 2. Prune all dead, diseased, and dying branches.
 - 3. Prune long uncharacteristic branches that detract from the shrub's overall form. Prune branches adjacent to bare spots to encourage full shrub growth.
 - 4. Prune flowering shrubs within two (2) weeks after flowering has ended (to prevent pruning of future

flower buds).

5. Prune ground covers to maintain a neat, well kept appearance and to prevent ground covers from climbing shrubs.
6. Cut back taller growing herbaceous perennials when they become rangy in appearance.
7. Pinch back dead flower heads on a weekly basis to promote greater flowering.

B. Fertilization

1. In early April, fertilize all shrubs, ornamental grasses, ground cover, and wildflower beds with 18-7-10 formulation, slow release fertilizer at the rate of 6 oz/1,000 sq. ft. Use a broadcast or liquid application method for fertilizer, or as directed by Owner's Representative.

2.03 TURF BY SODDING

- A. Refer to Section 029220 –Turf by Sodding

2.04 WEED CONTROL

- A. Weeds represent the greatest threat to successful establishment of ground covers, shrub planting and hydroseeded areas. Therefore, a vigorous, high level of weed control is necessary to maintain an attractive, healthy landscape.
- B. Spot control weeds weekly using chemical and/or mechanical means. Do not spray in windy weather. Use extra caution in application of chemicals to prevent overspray onto ornamental plant material. If necessary, use mechanical means for removal of weeds.

2.05 REPLACEMENTS

- A. Notify Owner's Representative of any unhealthy or dead plant material. Submit proposed removal and replacement and receive written authorization prior to replacement. Cost of removal and replacement shall be determined by pre-approved price schedule, or unit pricing in bid form.
- B. If replacement plant material becomes necessary, conform to material and installation standards (including Warranty Period of one year) established in the original project specifications.
- C. Replace plant material with size equal to that of the plant material being replaced.
- D. All replacements shall be affixed with an inconspicuous tag, to be removed after the one year warranty has expired. This tag shall indicate the date the plant material was installed.
- E. All replacements shall carry a one year warranty against expiration of the plant material, assuming adequate maintenance is performed.

2.06 DISEASE/INSECT CONTROL

- A. Inspect all landscape areas weekly during growing season for signs of insect or disease infestation.
- B. Apply seasonal applications of insecticide, herbicide, or fertilizer as necessary to protect plant material.
- C. Spot treat areas as needed to maintain healthy growing plant material. Spot treatment is included in the scope of this contract.
- D. Do not apply airborne insecticides or pesticides when unprotected people or animals may be affected.
- E. Protect all trees, shrubs, and ground covers from over spray that is detrimental to the health of ornamental plant material.
- F. Notify Owner's Representative if extensive spraying is required. Submit proposed for additional application and receive written authorization prior to commencement.

2.07 CLEANUP

- A. Clean all areas weekly to provide a neat, well groomed site. Pick up all trash and debris, sweep walks and rake decomposed granite and or screened rock in planting areas, parking islands, etc.

- B. Adjust cleanup to match seasonal needs.
- C. Cleanup after severe rain or hailstorms is not included [notify Owner's Representative within twenty four (24) hours after damage occurs]. Obtain a written authorization from Owner's Representative prior to cleanup.
- D. Provide weekly, complete policing and litter pickup to remove paper, glass, trash, undesirable materials, animal and bird droppings, situation and other accumulated debris within the hard surfaces and landscape areas to be maintained, including but not limited to: walkways, between and around planted areas, drains, catch basins, and pond edges.
- E. Litter pickup shall be completed as early in the day as possible, but in no case later than 10:00 A.M.
- F. Contractor shall be responsible for weekly removal of all trash, litter and accumulated debris to an approved off-site disposal site.
- G. Rake and remove accumulation of leaves and grass clippings. Remove from all turf and landscaped areas, including planting beds, turf areas and under trees, play and sand areas, and removed from site. Rake as needed in fall and spring. Collect and remove grass clippings in non-playfield areas only when thatch build-up in irrigated turf areas becomes a problem. Notify Owner's Representative and obtain approval prior to removing clippings during mowing operations.

2.08 SWEEP/WASHING

- A. Check paved areas bi-weekly for cracks, crevices and deterioration. Report any problems to Owner's Representative immediately. Walkways, hard surface areas, play and sand areas shall be cleaned, including but not limited to: the removal of all foreign objects from surfaces, such as gum, grease, paint, graffiti, broken glass, etc. Methods of sweeping of designed areas can incorporate one or all of the following:
 - 1. Power pack blowers
 - 2. Vacuums
 - 3. Brooms
 - 4. Push power blowers
- B. In the event the Contractor elects to use power equipment to complete such operations, Contractor shall be subject to local and state ordinances regarding noise levels. Further, any schedule of such operations may be modified by the Owner's Representative in order to ensure that the public is not unduly impacted by the noise created by such equipment.
- C. Sweep all walkway and hard surface areas once per week.

2.09 GRAFFITI

- A. Graffiti abatement is not part of the base maintenance contract and will be paid for on an hourly basis as approved by the Owner's Representative at the agreed upon unit price.
- B. Eradication and control of graffiti shall include all surfaces throughout the site, including, but not limited to, the following:
 - 1. Walkways and hard surfaces
 - 2. Site furniture
 - 3. Boulders
 - 4. Retaining walls
 - 5. Monumentation and signage
 - 6. Lighting
- C. All materials and processes used in graffiti eradication shall be non-injurious to surfaces and adjacent property, and approved by Owner's Representative.
- D. Appropriate surface preparation shall be made on painted surfaces. Paint applied shall be the exact shade

of color as existing paint, unless otherwise specifically approved by the Owner's Representative.

- E. Contractor shall use special care and attention when removing graffiti from treated or sealed surfaces. Such surfaces shall not be painted. Contractor shall use materials, and methods of application approved by the Manufacturer and Owner's Representative.
- F. Visually inspect all areas weekly. Remove graffiti the same day it is visually noted.

2.10 MAINTENANCE

- A. The Contractor will perform maintenance operations to keep installed plants in a healthy growing condition at no additional cost to the Owner.
- B. Beginning of Maintenance operations will begin immediately after each plant is installed and will continue as required until the start of the Maintenance Period. All maintenance activities shall be provided at the start of the maintenance period.
- C. Duties include the Contract to observe the plants at least once per week and appropriate maintenance performed.
- D. Replacing Unhealthy Plants
 - 1. A plant will be considered unhealthy or dead when main leader has died back or twenty five (25%) percent of crown is dead.
 - 2. The cause for an unhealthy plant will be determined and reported to the Owner's Representative.
 - 3. Unhealthy or dead plants will be immediately removed from the site and disposed of in a legal manner.
 - 4. The plant will be replaced as soon as seasonal conditions permit.
- E. Irrigation
 - 1. The Contractor will maintain the irrigation system and make any necessary repairs, regardless of cause, to ensure a complete and operational system during the course of the work, during Plant Maintenance/Warranty Period and until final written Notice of Acceptance.
 - 2. Plants will be watered as necessary to maintain an adequate supply of moisture within the plant's root zone.
 - 3. Run-off, puddling and wilting will be prevented.
- F. Weeding
 - 1. Plant beds and planting swales will be kept free of weeds, grass and other undesirable vegetation.
 - 2. Weeds in planting swales and plant beds will be removed before reaching two inches in height.
 - 3. Removal will include root growth.
- G. Pruning
 - 1. After planting, prune the plants of superfluous growth as directed by the Owner's Representative.
 - 2. Dead or broken tip growth will be removed.
 - 3. Typical growth habit of individual plants will be retained with clean cuts made at the natural growth collar at the base of the branch where it emerges from the parent trunk.
 - 4. "Headback" cuts at right angles to line of growth will not be permitted.
 - 5. All cuts larger than 3/4-inch diameter will be trimmed back to healthy tissues, smoothed so as not to retain water.
 - 6. Trees will not be poled or the leader removed, nor will the leader be pruned or "topped off".
 - 7. Improper cuts, stubs, dead and broken branches will be removed.
 - 8. All pruned material will be removed from project site.
 - 9. Pruning tools will be new and of proper size for the cut and maintained with sharp cutting surfaces.
- H. Any plants that have been knocked out of true for any reason will be straightened.
- I. All loose stakes and guying materials will be tightened. Staked plants will be checked for girdling and adjusted if necessary.
- J. Settling

1. Plants will be checked for settlement and will be reset to proper grade as necessary.
 2. Serious settlement of a plant will require re-planting to match original requirements as specified herein and in the Construction Documents.
- K. Edges of planting beds will be maintained to retain design intent.
- L. Planting areas will be protected from erosion. Eroded areas will be repaired to match original requirements.
- M. The Contractor will remove construction trash and debris on a daily basis.
- N. Condition of Planting at the End of the Maintenance Period.
1. All plant materials shall be live, healthy, undamaged and free from infestations.
 2. Ground cover, shrub areas, lawn, and other planting areas shall be free of all weeds (broadleaf and grass weeds).
 3. All lawn areas shall be completely covered at the time of Final Acceptance.
 4. Plantings that do not conform to specifications shall be replaced and brought to a satisfactory condition before Final Acceptance of the work can be made.
 5. Mow grass to one and one eighth (1-1/8) inches.
- O. The required maintenance instructions shall be forwarded to the Owner's Representative prior to the Final Acceptance to inform the Owner's Representative of any maintenance responsibilities that would be required for the project.
1. The items addressed by the manual may include but is not limited to the following:
 - (a) Irrigation
 - (b) Fertilization
 - (c) Weeding
 - (d) Pesticide and herbicide application
 - (e) Pruning
 - (f) Resetting unstable plants
 - (g) Mowing
 - (h) Repairing, adjusting or replace stakes and guying
 - (i) Repair damage caused by weather, wildlife and vandalism
 - (j) Precautions to prevent damage from cold, frost, sunburn, vandalism or other hazards
 - (k) Perform other maintenance operations necessary to ensure healthy plant growth
 - (l) Wood Chip replacement
 - (m) Decomposed Granite or Screened Rock Replacement

END OF SECTION

SECTION 029140

FINE GRADING & SOIL PREPARATION

PART 1 - GENERAL

1.01 SUMMARY

- A. This section covers work necessary for ripping, fertilizing, soil conditioning, and fine grading as indicated on the Construction Documents and details in accordance with the Contract Documents.

1.02 DESCRIPTION OF WORK

- A. The work shall include, but is not limited to, supplying fertilizer, soil conditioners and all labor, material procurement, equipment, tools, transportation protection, and services required for complete execution of the fine grading and soil preparation as indicated or reasonably implied on the Construction Documents and/or specified herein.
- B. Contractor shall retain a copy of the Construction Documents on the project site until final project acceptance.
- C. If any discrepancies exist between the plans and the specifications, the specifications will prevail.
- D. Contractor shall be responsible for obtaining all necessary permits required for installation of landscape. .

1.03 RELATED SECTIONS

- A. Examine all sections related to the project work.

1.04 SUBMITTALS

- A. Section 013300 – Submittals
- B. Section 029005 – General Landscape
- C. Section 029220 – Turf by Sodding
- D. Soil Test Reports
- E. Fertilizer Manufacturer's Specifications

1.05 QUALITY ASSURANCE

- A. Qualifications
 - 1. The Contractor shall provide, upon request of the Owner's Representative, past performance data indicating that equipment and procedure are suitable.
- B. Equipment and Procedure Approval
 - 1. The Owner's Representative has the final approval as to equipment and procedure to be utilized to complete the work under this contract.
- C. Rejection of Work
 - 1. Any method of installation or use of materials not in conformance with these specifications shall be reinstalled, repaired or removed as directed by the Owner's Representative at no additional cost to the Owner.
- D. Soils Testing
 - 1. The cost of testing shall be the responsibility of the Contractor.
 - 2. Results of the testing shall be submitted to the Owner's Representative.
 - 3. Soil Test Reports
 - (a) Submit soils report for all horticultural soil testing as specified herein to the Owner's Representative.

- (b) Soil report must include the following: complete fertility analysis (major nutrients and micronutrients copper, zinc, manganese and iron), pH, reverse lime analysis, calcium, magnesium, boron, sodium, potassium, exchangeable (plus soluble) sodium percentage, free lime, nitrate, nitrogen, phosphate, phosphorous, organic content, salts, salinity level by electro-conductivity, plasticity index and particle size gradation, and texture.
- 4. Soils Testing Agency
 - (a) Soil tests and analyses shall be performed by an approved independent certified agricultural soils testing laboratory.
 - (b) The laboratory shall be responsible for determining the number, location and collection of the soil samples for testing.
 - (c) The test results shall determine the acceptability of the soils.
 - (d) The testing laboratory shall suggest ways to amend soil to make it suitable to grow plants.
- 5. Imported Soils
 - (a) If imported soils are needed, the following tests shall be performed on the on-site and imported soils to ensure both soils have similar characteristics.
 - (b) Soils tests and analysis shall include tests for complete fertility analysis (major nutrients and micronutrients copper, zinc, manganese and iron), pH, reverse lime analysis, calcium, magnesium, boron, sodium, potassium, exchangeable (plus soluble) sodium percentage, free lime, nitrate, nitrogen, phosphate, phosphorous, organic content, salts, salinity level by electro-conductivity, plasticity index and particle size gradation, and texture.
 - (c) Contractor may be directed by the Owner's Representative to provide the amendments at no additional cost to the Owner.
- 6. Soil Percolation Testing
 - (a) A test for percolation will be done to determine positive drainage of plant pits and beds.
 - (b) The Owner's Representative will be notified, in writing, of all soil and drainage conditions detrimental to growth of plant material and will submit a proposal for correcting the condition.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with Sections 029005 – General Landscape

1.07 PROJECT/SITE CONDITIONS

- A. Do not perform work when climate and existing site conditions will not provide satisfactory results.
- B. Vehicular accessibility on-site shall be as directed by the Owner's Representative. Repair damage to prepared ground and surface caused by vehicular movement during work under this section to original condition at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Compost
 - 1. A totally organic product that has been aerobically and naturally processed without the addition of coarse wood chips, in such a manner as to maintain a consistent temperature of 140 degrees Fahrenheit or greater for a period of time sufficient to create the following characteristics, measured by dry weight.
 - (a) Moisture content of 30%-35%
 - (b) Organic matter to nitrogen ratio: 25:1 to 30:1.
 - (c) pH: 6.0 to 8.0 pH.
 - (d) Salts: maximum of 10 mmhos/cm.
 - (e) Less than 1% soil, dirt or sand.
 - (f) Maximum particle size of 1/2 inch diameter.
 - (g) Eradication of all harmful weed seeds, pathogens and bacteria.

(h) A non-offensive, earth smell.

B. Topsoil

1. Topsoil will be a screened, fertile, friable soil from well-drained arable land, free of brush, litter, stumps, nut grass, roots, heavy clay, noxious weeds, or other material toxic to plant growth.
2. Soils containing rocks, clods or objects larger than 3/4 inches in any dimension shall also be rejected.
3. The topsoil textural composition will be:
 - (a) silt 20-45%
 - (b) clay 15-20%
 - (c) sand 30-60%
4. The topsoil content will be:
 - (a) Topsoil 90%
 - (b) Mulch 15%
 - (c) Compost 10% (total organic matter from composted source)
5. The pH shall be no lower than 6.5 nor over 8.0.
6. Soluble salts shall not exceed 1000 PPM.
7. Plasticity index shall be in the range of 5 to 20 inclusive.

C. On-Site Topsoil

1. Topsoil shall be the existing surface soil stripped and stockpiled on the project site at a location approved by the Owner's Representative.
2. It shall be amended as required to meet topsoil quality and requirements, and as recommended by soils testing agency to meet local growing conditions for the type and variety of plants specified.
3. The source of topsoil shall be subject to observation by the Owner's Representative.

D. Imported Topsoil Source

1. If it is determined by the required soil testing that imported topsoil is required to be installed in lieu of on-site topsoil it shall meet or be amended to meet the requirements for topsoil as outline above and by the soil test.
2. The imported topsoil shall be furnished by the Contractor.
3. The source of topsoil shall be subject to approval by the Owner's Representative.
4. Imported topsoil shall be delivered and installed in sufficient quantity to complete the work under this Contract.

E. Fertilizer

1. Fertilizer applications shall be prescribed as specified herein and be based on soil testing as specified herein. The following guidelines will be used for soils testing and the resulting fertilizer applications.
 - (a) Formulated fertilizer analysis shall be submitted to Owner's Representative for review and shall be based upon recommendations made by soil lab. Contractor to submit soil sample to an Arizona based testing lab for analysis and fertilizer recommendations.
 - (b) See Soil Testing 1.04 Quality Assurances in this Section.
 - (c) If soil types are similar in structure, the Contractor may use a consistent formulated fertilizer for the entire site area. However, if soil structures are vastly different, a formulated fertilizer for each specific site area will be required.
2. General
 - (a) The following organic amendments, soil amendments and fertilizers are for bidding purposes only.
 - (b) Trees, shrubs and groundcovers shall have installed in their planting pits, Scotts Agriform Tablets per the manufacturer's recommended application rate based on container size.
 - (c) Ammonium Sulfate
 - (i) Chemical fertilizer will be standard commercial fertilizer, suitable for application with approved equipment, containing the minimum analysis and in physical form of 21-0-0 at an application rate of 2.5 pounds of product per 1,000 square feet.
 - (ii) Chemical fertilizer will be furnished in standard containers with the name, weight and guaranteed analysis of the contents clearly marked.

- F. Soil Amendments
 - 1. General
 - (a) The following organic amendments, soil amendments and fertilizers are for bidding purposes only.
 - 2. Sand will be washed masonry sand.
 - 3. Peat Moss
 - (a) Peat moss shall be Canadian "sphagnum" peat moss consisting of partially decomposed plant residues containing a negligible amount of woody or mineral material.
 - (b) Peat shall be evenly moist at the time of mixing and will be delivered to the site in unopened original containers.
 - 4. Gypsum
 - (a) Agricultural grade gypsum product, commercially packaged and free flowing, and containing a minimum of ninety five percent (95%) calcium sulfate by volume.
- G. Sodded Area Amendments
 - 1. Section 029220 – Turf by Sodding

2.02 SOURCE QUALITY CONTROL

- A. Verification of Performance
 - 1. Compost and other soil amendments are typically identified by a rate of cubic yards per 1000 s.f. In order to accurately determine if amendments are applied at the correct rate, the following chart is supplied. This chart is intended to verify the cubic yards by allowing a method for measuring the depth of the material spread uniformly across the surface of the planting area, with no exposed soil, prior to mixing the amendments with the existing soils. This method will be used during inspections to verify that adequate amendments are incorporated into the soil.

<u>c.y./1000 s.f.</u>	<u>Depth (inches)</u>
3 c.y./1000 s.f.	1"
3.5 c.y./1000 s.f.	1 1/8"
4.0 c.y./1000 s.f.	1 1/4"
4.5 c.y./1000 s.f.	1 1/2"
5.0 c.y./1000 s.f.	1 5/8"

- 2. An inspection of soil preparation will be performed by the Owner's Representative before areas will be released for planting. The inspection shall consist taking a soil sample to determine
 - (a) Proper tilling of the soil. Soil will be judged on how easily a soil probe can be inserted into the ground.
 - (b) Proper depth of tilling, and homogeneity of the soil. The soil sample will be judged on uniformity of the soil profile in the top six to eight inches.
 - (c) A visual inspection for adequate compost will be conducted. An area that has similar soil structures, that has not received compost will be used as the basis of comparison. Should a disagreement exist, multiple soil samples will be sent to an independent testing laboratory to determine the amount of organic matter present. The cost of this testing will be absorbed by the Owner's Representative.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. General
 - 1. Verify that existing site conditions are as specified and indicated before beginning work under this Section.
- B. Grades

1. Inspect to verify rough grading is within +0.2 foot of grades indicated and specified.
 - C. Damaged Earth
 1. Inspect to verify that earth rendered unfit to receive planting due to concrete, water, mortar, limewater or any other contaminant dumped on it has been removed and replaced with clean earth from a source approved by the Owner's Representative.
 - D. Cleanliness
 1. Inspect to verify that site is clean of all trash and debris.
 - E. Equipment
 1. Inspect to verify other trades have removed all equipment and staging areas from areas of work.
 - F. Unsatisfactory Conditions
 1. Report in writing to Contractor with copy to Owner's Representative.
 - G. Acceptance
 1. Beginning of installation means acceptance of existing conditions by installer.
- 3.02 PREPARATION
- A. Protection
 1. Locate sewer, water, irrigation, gas, electric, phone and other pipelines or conduits and equipment prior to commencing work.
 2. Be responsible for proper repair to landscape, utilities, walls, pavements and other site improvements damaged by operations under this section.
 - B. Weed Control
 1. Remove annual weeds by tilling. Remove perennial weeds by applying herbicide 1 week before soil preparation and as needed, but no sooner than three (3) months before beginning work.
 2. If the area to be developed is infested with noxious or invasive weeds, a chemical application will be required, at a rate recommended on the chemical's product label.
 - C. Surface Grade
 1. Remove weeds, debris, clods and rocks larger than one half (1/2) inch. Dispose of accumulated debris at direction of Owner's Representative.
 - D. Runoff
 1. Take measures and furnish equipment and labor necessary to control the flow, drainage, and accumulation of water. Ensure that all water will run off the grades.
 - E. Erosion Control
 1. Take measures and furnish equipment and labor necessary to control and prevent soil erosion, blowing soil and accumulation of wind-deposited material on the site throughout duration of work.
- 3.03 INSTALLATION
- A. Refer to Section 029220 – Turf by Sodding
 - B. Soil Amendment
 1. Evenly distribute soil amendments, conditioners, and fertilizer, and first application of fertilizer in landscaped areas at the rates outlined in Part 2.01 of this Section.
 - C. Mixing
 1. Thoroughly mix all materials to achieve a uniform, well pulverized soil mix free of clumps, stones, sticks and any other foreign debris. Distribute planting mix uniformly in planting pits per the Construction Documents and details and specified herein.
 - D. Fine Grading in all Landscape Areas:
 1. Do fine grading for areas prior to planting.

2. For ground surface areas surrounding buildings to be landscaped, maintain required positive drainage away from buildings.
 3. Establish finish grades to within 0.04 foot of grades indicated.
 4. Fine grading must be inspected and approved by Owner's Representative.
 5. Any damage caused by inclement weather, to finish grades before inspection, will be repaired by the Contractor, prior to acceptance by Owner's Representative.
 6. Sodded areas - Allow one (1) inch for sod.
- E. Noxious weeds or parts thereof shall not be present in the surface grade prior to landscaping.
- F. Prior to acceptance of grades, hand rake to smooth, even surface free of debris, clods, rocks, and vegetative matter greater than one half (1/2) inch.

3.04 FIELD QUALITY CONTROL

A. Inspection

1. Provide notice to Owner's Representative requesting inspection at least seven (7) calendar days prior to anticipated date of completion.
2. The following required inspections will be conducted to ensure proper preparation of soil, prior to planting.
 - (a) During, or after, the first cultivation
 - (b) After the application of specified soil amendments.
 - (c) During, or after, the second cultivation
 - (d) After the final grades have been established

B. Deficiencies

Owner's Representative will specify deficiencies to Contractor who shall make satisfactory adjustments and shall again notify Owner's Representative for final inspection.

3.05 CLEANING

- A. Remove debris and excess materials from site. Clean out drainage inlet structures. Clean paved and finished surfaces soiled as a result of work under this Section, in accordance with direction given by Owner's Representative.

3.06 PROTECTION

- A. Provide and install barriers as required and as directed by Owner's Representative, or as needed, to protect fine graded areas against damage from pedestrian and vehicular traffic until acceptance by Owner's Representative. Contractor is responsible for malicious destruction of fine graded areas caused by others until Final Acceptance (not including Warranty Period)
- B. Protection of Surfaces
1. Any materials spilled or sprayed will be cleaned up at the Contractor's expense to the satisfaction of the Owner's Representative.
- C. Protection of Existing Features
1. Protect existing utilities, paving, irrigation systems, and other facilities from damage caused by grading and soil preparation operations.

END OF SECTION

SECTION 029220

TURF BY SODDING

PART 1 - GENERAL

1.01 SUMMARY

- A. This section covers work necessary for installing the turf areas using sod as indicated on the Construction Documents and details in accordance with the Contract Documents.

1.02 DESCRIPTION OF WORK

- A. The work shall include, but is not limited to, supply all sod, labor, material procurement, equipment, tools, transportation protection, and services required for complete installation of the turf areas as indicated or reasonably implied on the Construction Documents and/or specified herein.
- B. Contractor shall retain a copy of the Construction Documents on the project site until final project acceptance.
- C. If any discrepancies exist between the plans and the specifications, the specifications will prevail.
- D. Contractor shall be responsible for obtaining all necessary permits required for installation of landscape.

1.03 RELATED SECTIONS

- A. Section 013300 – Submittal Process
- B. Section 029005 - General Landscape
- C. Section 029100 - Landscape Establishment and Maintenance
- D. Section 029140 - Fine Grading and Soil Preparation

1.04 REFERENCES

- A. Reference Standards: U.S. Department of Agriculture Rules and Regulations under Federal Seed Act and equal in quality to standards for Certified Seed.

1.05 SUBMITTALS

- A. Section 013300 – Submittal Process
- B. Section 029005 - General Landscape
- C. Soil Test Reports
 1. Submit Certificate of Analysis for all horticultural soil testing as specified by the Owner's Representative and as specified herein.

1.06 QUALITY ASSURANCE

- A. Qualifications
 1. The Contractor shall provide, upon request of the Owner's Representative, past performance data indicating that equipment and procedure are suitable.
- B. Equipment and Procedure Approval
 1. The Owner's Representative has the final approval as to equipment and procedure.
- C. Rejection of Work
 1. Any turf area that fails to produce, in the opinion of the Owner's Representative, shall be rejected and reinstalled at no cost to the Owner.
 2. Any method of installation or use of materials not in conformance with these specifications shall be reinstalled, repaired or removed as directed by the Owner's Representative at no additional cost to the

Owner.

D. Soils Testing

1. The cost of testing shall be the responsibility of the Contractor.
2. Results of the testing shall be submitted to the Owner's Representative.
3. Soil Test Reports
 - (a) Submit soils report for all horticultural soil testing as specified herein to the Owner's Representative.
 - (b) Soil report must include the following: complete fertility analysis (major nutrients and micronutrients copper, zinc, manganese and iron), pH, reverse lime analysis, calcium, magnesium, boron, sodium, potassium, exchangeable (plus soluble) sodium percentage, free lime, nitrate, nitrogen, phosphate, phosphorous, organic content, salts, salinity level by electro-conductivity, plasticity index and particle size gradation, and texture.
4. Soils Testing Agency
 - (a) Soil tests and analyses shall be performed by an approved independent certified agricultural soils testing laboratory.
 - (b) The laboratory shall be responsible for determining the number, location and collection of the soil samples for testing.
 - (c) The test results shall determine the acceptability of the soils.
 - (d) The testing laboratory shall suggest ways to amend soil to make it suitable to grow plants.
5. Soil Percolation Testing
 - (a) A test for percolation will be done to determine positive drainage of plant pits and beds.
 - (b) The Owner's Representative will be notified, in writing, of all soil and drainage conditions detrimental to growth of plant material and will submit a proposal for correcting the condition.

E. Documentation of Sod Availability

1. Contractor is responsible for documenting and verification of the availability of the sod within thirty (30) days of the award of contract.
2. Submit written documentation to the Owner's Representative within 30 days after contract award for review and approval showing that the sod is available and secured in a wholesale nursery.
3. Documentation will specify the following:
 - (a) Nursery name
 - (b) Contact person
 - (c) Phone number
 - (d) Location of nursery
4. This verification will serve as proof of availability for the sod.

F. Sod Materials

1. Subject to inspection and acceptance. The Owner's Representative reserves the right to reject at any time or place prior to acceptance, any work and sod which in the Owner's Representative's opinion fails to meet these specification requirements. Rejected sod will be promptly removed from site.

G. Inspection

1. Primarily for quality; however, other requirements are not waived even though visual inspection results in acceptance. Notify the Owner's Representative of intended sod farm prior to cutting for inspection. Inspection at growth site shall not preclude the right of rejection at project site.
2. Inspection shall be made periodically during sodding, at completion and at end of Warranty Period by the Owner's Representative.
3. Inspection shall be scheduled prior to sodding. The Owner's Representative shall inspect finish grades on which sod will be laid. This inspection does not dismiss the Contractor's responsibility for creating positive drainage across the landscaped areas.

H. Sod Standards

1. General - Healthy, thick turf having undergone a program of regular fertilization, mowing and weed control; free of objectionable weeds; uniform in green color, leaf texture and density; healthy, vigorous

root system; inspected and found free of disease, nematodes, pests and pest larvae by the entomologist of the State Department of Agriculture.

2. Each piece of Sod - Sandy-loam soil base that will not break, crumble or tear during sod installation.
3. Thickness – one half (1/2) inch minimum root zone thickness.
4. Thatch - Not to exceed one half (1/2) inch uncompressed.
5. Size – Large rolls, forty two (42) inches wide x one hundred and five (105) feet long, approximately four hundred (400) square feet in size, shall be installed as often as possible, cut no more than twenty four (24) hours prior to delivery. Small size sixteen (16) inches x seventy two (72) inches may be used in areas where large rolls cannot be laid, cut in strips twenty four (24) inches wide no more than twenty four (24) hours prior to delivery.

1.07 DELIVERY, STORAGE AND HANDLING

A. General

1. Refer to Section 029005 - General Landscape

B. Packing and Shipping

1. Deliver on large sod on rolls small sod rolls on pallets, properly loaded on vehicles and with root system protected from exposure to sun, wind, and heat in accordance with standard practice and labeled with botanical and common name of each grass species in accordance with Federal Seed Act.
2. Protect sod from dehydration, contamination and heating at all times. Keep stored sod moist and under shade or covered with moistened burlap.
3. Do not drop sod rolls from carts, trucks or pallets.

C. Acceptance at Site

1. Material shall be inspected upon arrival at job site.
2. Immediately remove unacceptable material from job site.

D. Storage and Protection

1. Do not stack sod more than two (2) feet deep.
2. Do not deliver more sod than can be installed within twenty four (24) hours. Storage is not recommended.

1.08 PROJECT/SITE CONDITIONS

A. Environmental Requirements:

1. Do not install sod on saturated or frozen soil unless otherwise directed by the Owner's Representative.
2. Comply with all local and state regulations for dust control.

B. Existing Conditions

1. Import and place any fill material required to adjust the fine grade to meet drainage requirements or to match hard surface fine grades, or as indicated on plans (e.g.: one and one half (1-1/2) inches lower than adjacent concrete paving).
2. Vehicular accessibility on-site shall be as directed by the Owner's Representative. Repair damage to prepared grounds and surfaces caused by vehicular movement during work under this Section to original condition at no additional cost to Owner.

1.09 WARRANTY

- A. Warranty sod for a period of one year from date of Substantial Completion is in a healthy, vigorous growing condition.
- B. During the original Warranty Period, replace at once sod areas that die due to natural causes, etc., or which in the Owner's Representative's opinions are unhealthy.
- C. Replacement will not be required in any season definitely unfavorable for sodding.
- D. Install replacements as originally specified and warranted.

PART 2 - PRODUCTS

2.01 SOD

- A. Sod shall be per the Landscape Plan or approved equal.

2.02 SOIL AMENDMENTS

A. Compost

- 1. 1. A totally organic product that has been aerobically and naturally processed without the addition of coarse wood chips, in such a manner as to maintain a consistent temperature of 140 degrees Fahrenheit or greater for a period of time sufficient to create the following characteristics, measured by dry weight.
 - (a) Moisture content of 30%-35%
 - (b) Organic matter to nitrogen ratio: 25:1 to 30:1.
 - (c) pH: 6.0 to 8.0 pH.
 - (d) Salts: maximum of 10 mmhos/cm.
 - (e) Less than 1% soil, dirt or sand.
 - (f) Maximum particle size of 1/2 inch diameter.
 - (g) Eradication of all harmful weed seeds, pathogens and bacteria.

B. Sand

- 1. Sand will be washed masonry sand.

C. Fertilizer

- 1. Ammonium Sulfate
 - (a) Chemical fertilizer will be standard commercial fertilizer, suitable for application with approved equipment, containing the minimum analysis and in the physical form of 21-0-0 at an application rate of 5 pounds of product per 1000 square feet.
 - (b) Chemical fertilizer will be furnished in standard containers with the name, weight, and guaranteed analysis of the contents clearly marked.
- 2. Gypsum
 - (a) Agricultural grade gypsum product, commercially packaged and free flowing, and containing a minimum of ninety five percent (95%) calcium sulfate by volume.

2.03 EQUIPMENT

Equipment used shall be consistent with industry standards and approved by Owner's Representative prior to installation.

PART 3 - EXECUTION

3.01 EXAMINATION

A. General

- 1. Verify that existing site conditions are as specified and indicated before beginning work under this section.
- 2. The planting of turf grass shall not commence until the soil preparation has been completed.
- 3. The planting of turf grass shall not commence until the irrigation system in the area to be planted has been installed, made fully operational, and has been approved by the Owner's Representative.

B. Layout

- 1. Verify layout of sodded areas as indicated on Construction Documents and Civil Engineering Plans prior to starting operations.

C. Grades

- 1. The Contractor shall be responsible for the coordination and installation of all grade stakes for the layout and grading as shown on the Construction Documents including the Civil Engineering Plans. All

grades and stakes shall be set by an Arizona Registered Land Surveyor including a 20' x 20' grid for multi-use turf area.

1. The finish grade shall be uniform and set to the grades indicated on the grade stakes set in the topsoil for the new sod areas and shall be approved by the Owner's Representative for approval prior to the installation of the sod.
2. Do not deliver sod to the site until the finish grade has been approved by the Owner's Representative.
3. Verify that grades are within 0.2 ft. of grades indicated and specified.

D. Unsatisfactory Conditions

1. Report in writing to Contractor with copy to the Owner's Representative.
2. Beginning of installation means acceptance of existing conditions by the Contractor.

3.02 SCHEDULE AND LOCATIONS

A. Scheduling

1. Perform sodding only after other work affecting the areas to receive sod is complete.
2. The Owner's Representative, in conjunction with the Contractor, will establish exact dates to begin sod installation.
3. The Owner's Representative, in conjunction with the Contractor, may adjust the schedule of sod installation, until conditions are suitable.

B. Locations

1. Install areas as shown on the Construction Documents and Civil Engineering Plans.
2. Sod installation shall not be performed outside the limits of the project or as shown on the Construction Documents and Civil Engineering Plans.

3.03 PREPARATION

A. Protection

1. Identify prepared sod areas requiring protection and erect barriers for proper protection and traffic control.
2. Any damage to sodded areas, either accidental or otherwise, by the Contractor or sub-contractors shall be repaired by the Contractor to the satisfaction of the Owner's Representative at no additional cost to the Owner.

B. Sod Installation

1. The responsibility for all preparation will be by the Contractor.

C. Subgrade Preparation

1. For areas to be sodded, at the time of planting, the top six (6) inches will be free of stones, stumps, or other deleterious matter three (3) inches in diameter or larger, and free from all wire, plaster, concrete, rubble, or similar objects which would hinder planting, maintenance, or sod growth.
2. Dispose of accumulated debris off-site in approved legal dump site, or in an on-site location pre-approved by the Owner's Representative.
3. Ripping and Loosening Soil
 - (a) Prior to irrigation installation, scarify and rip areas to receive sod to a minimum depth of twelve inches (12") below rough grade to loosen compacted soil.
 - (b) Cross rip using a minimum of two (2) perpendicular passes.
4. Ripping of Soils with Shallow Caliche or other Adverse Soil Conditions
 - (a) When noted on Project Plans, areas with shallow caliche or other adverse conditions shall be ripped to a minimum depth of eighteen (18) inches or to the depth noted herein, whichever is greater.
 - (b) The equipment used to scarify these areas shall have teeth with spacing of not more than eighteen (18) inches on-center. If a single ripping bar is used, passes shall be made eighteen (18) inches on-center.

- (c) After ripping, the area shall be graded to the lines and grades shown or noted on the Construction Documents and Civil Engineering Plans.
- D. Soil Amendments
1. For areas to be sodded, after approximate finish grades have been established, add five (5) cubic yards of specified compost per 1,000 sq. feet of sod area.
 2. Soil conditioning and fertilizers will be added as determined by soils testing. As a general guideline, the following rates shall be utilized.
 - (a) Fertilizer – Ammonium Sulfate (21-0-0) 2.5 lbs. per 1000 ft²
 - (b) Gypsum 60 lbs. per 1000 ft²
 - (c) Specified Compost 5.0 c.y. per 1000 ft²
 - (d) Sand 1.0 c.y. per 1000 ft²
 3. All amendments shall be uniformly spread and cultivated into the top six (6) inches of soil by means of a mechanical tiller.
- E. Fine Grading and Repair
1. Carefully smooth all surfaces to be sodded and roll areas to eliminate soil depressions and surface irregularities.
 2. Re-establish grade and specified conditions to damaged sod areas prior to placing sod.
 3. Re-grade as required.
 4. All rocks with a dimension of one half (1/2) inch or larger shall be removed from the soil surface. Rock removal shall be repeated after the irrigation system has been made operational and the initial irrigation cycles conducted.
 5. All foreign, deleterious materials and rocks and clods one half inch (1/2) in diameter or greater in the top six inches (6) of the soil will be removed from the site and disposed of appropriately.
 6. Grading of Turf Grass Fields:
 - (a) The finished grades in all turf grass athletic fields shall be established using laser leveling techniques.
 7. Surface Tolerances:
 - (a) The finished grades in turf grass areas shall be within plus or minus 1/10 of a foot of the grades noted on the Civil Engineering Plans or interpolated from the contours shown on the drawings. Within the field areas the surface shall not vary more than 3/4 inch from the bottom surface of a ten (10) foot straightedge when the straightedge is laid on the prepared soil surface.
 8. Settling- Thoroughly water settle soil for two (2) to four (4) days before final grading.
 9. The Owner's Representative will review and approve areas designated to receive stolons for finished grading and proper site drainage before the start of hydrostolon installation.
- F. Smoothing
1. Plow, disk or till all areas to a minimum depth of six (6) inches to break up large clods or fill voids.
 2. Drag rake turf areas.
 3. Establish grade at walls, walks and curbs per details.
- G. Drainage
1. Ensure finished areas of turf are such that positive drainage of storm and irrigation water will occur and ponding of water will be minimized.
- H. Weeding
1. If the area to be developed is infested with noxious or invasive weeds, a chemical application will be required, at a rate recommended on the chemical's product label.
- I. General Irrigation System Requirements
1. The irrigation system shall be fully operational and approved by the Owner's Representative prior to starting sod installation.
 2. Adjust irrigation heads for proper coverage and to minimize spray outside of turf area prior to the installation of sod.

3. Locate, protect and maintain the irrigation system during sod installations.
 4. Repair irrigation system components damaged during sod installation at the Contractor's expense.
- J. Adjustment
1. Adjust irrigation heads to proper watering height according to depth of sod material but lower than compacted blade height to enable lawn mowers to cut grass freely without damage to the sprinkler system.
- K. Refer to maintenance portion of this section.
- 3.04 INSTALLATION
- A. Finish Grade
Finish grade will be as per Construction Documents and Civil Engineering Plans.
- B. Laying Sod
- 3.05 SODDING
- A. Sodding
1. Soil on which sod is laid shall be slightly moist.
 2. Lay with longest dimension parallel to contours and in continuous rows.
 3. Tightly butt ends and sides of sod together. Stagger and compact vertical joints between sod strips by rolling so sod will be incorporated with the ground surface, insuring tight joints between adjacent pieces.
- B. Rolling
1. When soil and sod are moist, roll sod lightly as soon as possible after it is laid. Delay rolling until just before the second watering.
- C. Topsoil
1. Add along exposed edges to match adjacent grade. Feather topsoil out approximately one (1) ft. from edge of sod.
- D. Drainage
1. Ensure finished areas of sod are such that positive drainage of storm and irrigation water will occur and ponding of water will be minimized.
- 3.06 REPAIR OF EXISTING SOD AREAS DISTURBED BY RENOVATION
- A. Repair existing sod areas disturbed by renovation work (utilities, paving, etc.), in accordance with these Specifications and Construction Documents to satisfaction of the Owner's Representative.
- B. Add washed masonry sand and re-sod as necessary to eliminate tire ruts and other depressions.
- 3.07 MAINTENANCE
- A. Mowing
1. The mower blades or reels shall be sharpened and maintained to provide a smooth, even cut without tearing. The result shall be a uniform, level cut without ridges or depressions. Variations of weather from season to season may require additional or fewer mowings. Clippings need not be collected unless thatch build-up becomes a problem. Use mowers of proper size to mow difficult areas. Do not use heavy mower in areas prone to rutting. Do not leave tire marks on sidewalk.
 2. Mow all turf areas during the growing season at an approximate height of one and one eighth inch (1-1/8) inch. Mowing shall be performed so that no more than one-third (1/3) of the grass blade is removed during each mowing in returning the grass to the accepted height, or one (1) time per week, whichever is more frequent. Mowing shall not be delayed until grass blades bend over and become matted. Remove grass clippings from pavement areas.
 3. Mowing shall not be done when grass is wet.
 4. Perform all mowing with equipment suitable for the type of turf.

5. Dispose of all clippings off-site in a legal manner, as necessary.
 6. If Final Acceptance of area is more than fourteen (14) days after sod was laid, the Contractor shall mow all turf with in the forty-eight (48) hours prior to the final walk through.
- B. Trimming
1. Trim all turf areas inaccessible to mowers after each mowing. Trim to match the height of the open turf areas. Protect trees and shrubs from damage caused by trim lines. Replace all plant material killed or seriously injured by trim lines. Replace with plants of equal or better size and quality at no cost to the Owner. Seriously injured is defined as when thirty percent (30%) or greater of the cambium layer of the trunk circumference has been removed by trim lines or when shrubs have been seriously deformed (in the Owner's Representative's opinion).
 2. Protect fences, buildings, and other structures from damage caused by mowers or trim lines.
 3. Dispose of all clippings off-site.
- C. Edging
1. Edge irrigated turf areas only along all walks and curbs, using a steel bladed edger. Remove debris created by edging. Sweep walks and gutters to remove debris and provide a clean site.
 2. Dispose of all clippings off-site in a legal manner.
- D. Weed Control
1. All irrigated and non-irrigated areas shall be kept free of weeds. Weeding shall be done manually or by the use of a selective herbicide. The Contractor shall replace any desirable plants damaged as a result of his spraying.
 2. Control broadleaf weeds with selective contact herbicides in spring, and spot control as needed throughout the summer. Application of pre-emergence herbicide to control grassy weeds is not included. If needed for a known weed problem, notify the Owner's Representative and furnish a price for applying the appropriate material.
 3. Spray and remove all weeds growing in hard surface areas, such as between concrete gutters and sidewalks.
 4. Protect all ornamental trees, shrubs, and ground covers from overspray.
 5. Conform to legal requirements, the Owner Representative's requirements and manufacturer's recommendations. Submit all Material Safety Data Sheet (MSDS) to the Owner's Representative for approval prior to application.
- E. Fertilization
1. Fertilization shall be conducted according to the following schedule:
 - (a) Week 2 application of 20-5-10-1% Fe 25% SCU at the rate of 5 lbs. per 1,000 sq. ft. for 1 lb. Actual Nitrogen per 1,000 sq. ft. Thoroughly sweep curb, gutter, and walks after application of fertilizer and prior to irrigating. Do not apply fertilizer during rainfall or when rainfall is imminent. Protect all concrete from iron spots due to fertilizer.
 - (b) Week 6 application of 24-6-12-3% Fe 40% SCU at the rate of 5 lbs. per 1,000 sq. ft. for 1 lb. Actual Nitrogen per 1,000 sq. ft. Thoroughly sweep curb, gutter, and walks after application of fertilizer and prior to irrigating. Do not apply fertilizer during rainfall or when rainfall is imminent. Protect all concrete from iron spots due to fertilizer. This application will consist of:
 - (i) 40% SCU slow release
 - (ii) 60% Urea Nitrogen
 - (iii) 8% Sulfate Sulfur
 - (iv) 3% Iron
 - (v) Trace element forms Zinc, Copper, Boron, and Manganese
- F. Subsequent Fertilizer Application
1. Eight (8) to ten (10) weeks after the installation of sod the sports field turf and every forty five (45) days thereafter until Final Acceptance of project by the Owner's Representative, apply 1 lb. of nitrogen or 5 lbs. of fertilizer material per 1,000 sq. ft. using 20-10-5 with 50% sulfur coated urea to all sod and sports field turf seed areas.

G. General

1. The maintenance shall begin immediately after each area is sodded and continue until Final Acceptance of entire project. During this time, the Contractor shall be responsible for watering, mowing, spraying, weeding, aerating, fertilizing, and all related work as necessary to ensure that sodded areas are in vigorous growing condition. Contractor shall furnish all supervision, labor, material and equipment to maintain turf areas.
2. Activities and tasks associated with general maintenance shall include, but not be limited to:
 - (a) Daily inspection of the site to check on-site conditions and to perform remedial activities required to correct safety deficiencies and/or to address field conditions impacting the health of the turf and landscape plantings.
 - (b) Weekly mowing of all turf areas.
 - (c) Weekly removal of surface rocks larger than one (1) inch from all turf areas.
 - (d) Weekly repair of surface irregularities within all turf areas.
 - (e) As-specified re-fertilization of turf areas.
 - (f) As-needed application of horticultural chemicals to control diseases and pests.
 - (g) As-needed repair of erosion.
 - (h) As-needed clean-up.

H. Watering

1. Contractor shall know, understand, and abide by all local water restrictions, if applicable.
2. Contractor will be held responsible for any fines received for violating any watering restrictions in effect, if applicable.
3. The Contractor shall attempt to provide the minimum water necessary to maintain irrigated landscape areas, especially in times of drought and during summer months. The Owner's Representative will determine what appropriate level of distress is acceptable on turf areas.
4. Initial Irrigation.
 - (a) Water sod sufficiently to moisten subsoil to a depth of at least four (4) inches, in a manner not to cause erosion or damage to adjacent finished surfaces for a number of repeat cycles to prevent sod from drying out until rooting develops. Water shall be free of substances harmful to plant growth. The Contractor shall be responsible for furnishing water from underground sprinkler system.
5. Subsequent Irrigation.
 - (a) Thoroughly water the completed lawn surfaces, moistening soil at least eight (8) inches deep every second day, or at other appropriate interval, until Final Acceptance of the work.
 - (b) Repeat sprinkling at regular intervals to keep sod moist at all times until rooted.
 - (c) After sod is established, decrease the frequency and increase amount of water per application as necessary.
 - (d) The amount of water and the frequency at which it is applied shall be reduced during winter months.
 - (e) Run-off, puddling, and wilting shall be prevented.

I. Re-sodding

1. Re-sod spots larger than nine (9) inches square and not having healthy, uniform stand of grass.

J. Insect and Disease Control:

1. As required, using insecticides and fungicides approved by Owner's Representative.

3.08 NOTIFICATION OF INSPECTION

A. Notification

1. Give notice requesting inspection by the Owner's Representative at least seven (7) calendar days prior to the anticipated date of completion. All sod must be healthy and significantly rooted in place in order to be considered complete.

B. Deficiencies

1. If deficiencies exist, the Owner's Representative shall specify such deficiencies to the Contractor who shall make satisfactory adjustments and will again notify the Owner's Representative for final inspection.

3.09 CLEANING

- A. Remove pallets, unused sod, and other debris from site. Clean paved and finished surfaces soiled as a result of work under this Section in accordance with directions given by Owner's Representative. Clean out drainage inlet structures.

3.10 PROTECTION

- A. Provide and install barriers as required and as directed by Owner's Representative, or as needed, to protect sodded areas against damage from pedestrian and vehicular traffic until acceptance by Owner's Representative. Contractor is responsible for malicious destruction of sodding caused by others until Final Acceptance (not including Warranty Period).

END OF SECTION