

CONTRACT DOCUMENTS

SIERRA LAKES COUNTY WATER DISTRICT

2024 SODA SPRINGS ROAD WATERLINE REPLACEMENT PROJECT

Soda Springs, CA

APRIL 2024



**SIERRA LAKES
COUNTY WATER DISTRICT**

OWNER:

Sierra Lake County Water District
7305 Short Road
PO Box 1039
Soda Springs, CA 95728
Phone: (530) 426-7800
Fax: (530) 426-1120

ENGINEER:

PAUL A SCHULTZ, PE
7299 3rd AVENUE
PO BOX 269
TAHOMA, CA 96142
(530) 525-9347

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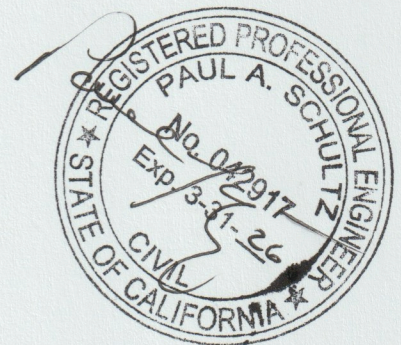


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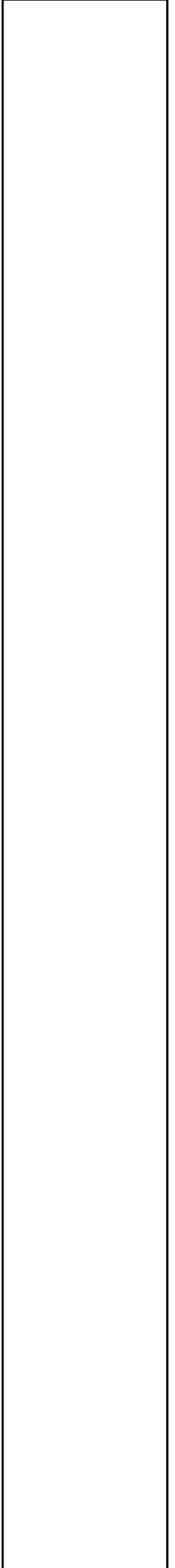
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SECTION 00100
ADVERTISEMENT FOR BIDS

Sierra Lakes County Water District
7305 Short Road
P. O. Box 1039
Soda Springs, CA 95728

2024 Soda Springs Road Waterline Replacement Project

Bids for the construction of the **2024 Soda Springs Road Waterline Replacement Project** will be received, by Sierra Lakes County Water District (District) via electronic submission to Shauna Lorange at SLorange@SLCWD.org until **2:00 P.M.** local time on **May 9, 2024**. Bid results will be made available by request.

The Project bid generally consists of abandonment, demolition, and construction of an 8-inch waterline.

Award of the Contract is scheduled to occur at a special Board of Directors meeting prior to **May 31, 2024**. The Notice to Proceed for Construction shall be issued no later than **June 1, 2024**. The Contractor will have 84 calendar days to complete the Work in compliance with all applicable laws and regulations following the issuance of the Notice to Proceed.

The Engineer's Opinion of Probable Construction Costs for the project Base Bid is between **\$387,000. and \$473,000.**

Bids will be received for a single prime Contract. Bids shall be on a unit price basis.

Documents may be examined, downloaded, and printed (at contractor's expense) online via the Districts website, SLCWD.org. For questions regarding this project, and for complete contract requirements, contact: Paul Schultz, P.E., (530) 525-9347, PO BOX 269, 7299 3rd Avenue, Tahoma, CA 96142.

This is a public works project and is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. No Contractor or Subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

The successful Bidder and any subcontractor under the successful Bidder shall not pay less than the prevailing wage of per diem wages as determined by the Department of Industrial Relations for the locality in which the work is being performed. Copies of the prevailing wage requirements are included in these Bidding Documents.

A pre-bid conference will be held at **10 AM** local time on **April 30, 2024** at the District's Offices located at 7305 Short Road, Soda Springs, CA 95728. Attendance at the pre-bid conference is highly encouraged but is not mandatory. A tour of the Project site will be provided upon request following the pre-bid conference.

A 10% bid security shall be furnished in accordance with the Instructions to Bidders.

Bidders shall submit proof of qualifications to perform the Work as described in the Instruction to Bidders. The successful Bidder shall furnish a payment bond in accordance with the Instructions to Bidders.

Prospective Bidders shall be licensed Contractors in the State of California and shall be skilled and regularly engaged in the general class or type of work called for under the Contract. Each Bidder shall possess a valid and current General Engineering Contractor's License (Class A) issued by the State of California Contractor's License Board.

Bids will be evaluated by the lowest price on the base bid plus those alternates that were specifically identified in the invitation for bids.

This proposal to the Owner is irrevocable for a period of sixty (60) days after the date of the bid opening. The right is reserved by the Owner to reject any and all bids, waive irregularities, informalities, or non-conformities; or to accept the bids deemed in their best interest, such as the lowest, responsible, responsive bid. The right to add or delete items, or change quantities shown on the bid forms is further reserved by the Owner. Omission or improper completion of any or all of the proper bidding documents may be considered as a reason for rejection of the Bid.

Owner: **Sierra Lakes County Water District**

By: **Shauna Lorange**

Title: **General Manager**

Date: **April 22, 2024**

END OF SECTION

SECTION 00200
INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

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

A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.

2.02 Complete **and unaltered** sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the county and state where the Project is located.

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

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others." D.

Other required information regarding qualifications.

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

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

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

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

4.02 *Existing Site Conditions*

- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
 - 1. The Supplementary Conditions identify:
 - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
 - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
 - 2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
 - 3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.

- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

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

4.05 *Other Work at the Site*

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

ARTICLE 5 – BIDDER'S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price

bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

- 6.01 A pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **10%** percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 60 days after the Bid Award, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

- 9.01 The number of days within which the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

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

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 11.01 The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids in the case of a proposed substitute and 5 days prior in the case of a proposed “or-equal.” Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. Substitutes and “or-equal” materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.04 and 7.05 of the General Conditions after the Effective Date of the Contract.
- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.
- 11.03 If an award is made, Contractor shall be allowed to submit proposed substitutes and “or-equals” in accordance with the General Conditions.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 [Deleted]
- 12.02 [Deleted]
- 12.03 If required by the bid documents, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner additional lists of the Subcontractors or Suppliers proposed for the major portions of the Work, trades on the job, and specific areas or expertise required.

If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.
- 12.05 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.
- 12.06 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.
- 12.07 Per the directions provided in Section 00440 – List of Subcontractors, the Contractor shall submit with the Bid Submittal a list of all Subcontractors and necessary information to conform with Public Contract Code Section 4104.

ARTICLE 13 – PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown. A.
- 13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.05 A Bid by an individual shall show the Bidder's name and official address.

- 13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.07 All names shall be printed in ink below the signatures.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

- 14.01 Base Bid with Alternates
- A. Bidders shall submit a Bid on a unit price basis for the base Bid and include a separate price for each alternate described in the Bidding Documents and as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.
- B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form.
- 14.02 *Unit Price*
- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 14.03 *Allowances*
- A. For cash allowances, the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.
- 14.04 [Deleted]

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one **electronic** copy of the Bid Form and the Bid Bond Form. The Bid Form is to be completed and submitted with the Bid

security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to the Owner and location as indicated in the Advertisement for Bids.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

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

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

- 19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
 - B. In the comparison of Bids, Base Bids will be used to determine contract award, and alternates will be awarded at the sole discretion of the Owner.
 - C. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- 19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

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

ARTICLE 21 – SIGNING OF AGREEMENT

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

ARTICLE 22 – SALES AND USE TAXES (NOT USED)

ARTICLE 23 – CONTRACTS TO BE ASSIGNED (NOT USED)

ARTICLE 24 – WORKER'S COMPENSATION REQUIREMENTS

- 24.01 As required by Section 1860 of the California Labor Code and in accordance with the provisions of Section 3700 of the Labor Code, every contractor will be required to secure the payment of workers' compensation to its employees.

- 24.02 In accordance with Section 1861 of the California Labor Code, the contractor shall furnish the owner with a statement as follows: "I am aware of the provisions of 3700 of the Labor Code which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance 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."

ARTICLE 25 – WAGE RATE REQUIREMENTS

- 25.01 The prevailing wage rates of the State of California apply to this contract [as/nor] do any requirements of the State of California associated with the use of these State Prevailing wages.
- 25.02 Prevailing Wages: Notice is hereby given that, pursuant to 1773 of the Labor Code of the State of California, the owner has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holidays and overtime work for each craft, classification, or type of worker required to execute the contract. A copy of said prevailing rate of per diem wages is on file in the principal office of the owner, to which reference is hereby made for further particulars. Said prevailing rate of per diem wages will be made available to any interested party upon request, and a copy thereof shall be posted at each job site.
- 25.03 Statutory Penalty For Failure to Pay Minimum Wages: In accordance with 1775 (a) through (c) of the California Labor Code, the contractor shall, as a penalty to the State of political subdivision on whose behalf a contract is made or awarded, forfeit not more than two hundred dollars (\$200.00) for each calendar day or portion thereof, for each worker paid less than the prevailing wage rates as determined by the director for the work or craft in which the worker is employed for any public work done under the contract by the contractor or, except as provided in subdivision 1775 (b), by any subcontractor under the contractor.
- 25.04 Statutory Penalty for Unauthorized Overtime Work: In accordance with Section 1813 of the California Labor Code, the contractor shall as a penalty to the State or political subdivision on whose behalf the contract is made or awarded, forfeit twenty-five dollars (\$25.00) for each worker employed in the execution of the contract by the respective contractor or subcontractor for each calendar day during which said worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of Sections 1810-1815 of the California Labor Code.
- 25.05 Apprenticeship Requirements: Contractor agrees to comply with Sections 1777.5, 1777.6 and 1777.7 of the California Labor Code relating to the employment of apprentices. The responsibility for compliance with these provisions is fixed with the prime contractor for all apprenticeship occupations. Under these sections of the law, contractors and subcontractors must employ apprentices in apprenticeship occupations, where journeymen in the craft are employed on the public work, in a ratio of not less than one apprentice hour for each five journeymen hours (unless an exemption is granted in accordance with 1777.5) and contractors and subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public work solely on the ground of race, religious creed, color, national origin, ancestry, sex, or age, except as provided in 3077 of the Labor Code. Only apprentices, as defined in 3077, which provides that an apprentice must be at least 16 years of age, who are in training under apprenticeship standards and who have signed written apprentice agreements will be employed on public works in apprenticeship occupations.
- 25.06 Payroll Records: Contractor shall keep accurate payroll records in format specified by the Division of Labor Standards Enforcement. Said information shall include, but not be limited to, a record of the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and actual per diem wages paid to each journeyman,

apprentice, or worker employed by the contractor. Copies of such record shall be made available for inspection at all reasonable hours, and a copy shall be made available to employee or his authorized representative, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards in compliance with California Labor Code, Section 1776. Contractor and subcontractors shall furnish and submit electronic certified payrolls directly to the Labor Commissioner, and duplicate copies available to the owner.

ARTICLE 26 – SUBCONTRACTOR LISTING LAW

- 26.01 In accordance with Section 4104 of the California Public Contract Code, each bidder, in his or her bid, shall set forth the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the prime contractor's total bid.
- 26.02 In accordance with Section 4107 of the California Public Contract Code, no contractor whose bid is accepted shall without consent of the owner either: (a) substitute a person as a subcontractor in place of the subcontractor listed in the original bid; or (b) permit a subcontract to be voluntarily assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the original bid; or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the prime contractor's total bid as to which his or her original bid did not designate a subcontractor.
- 26.03 Penalties for failure to comply with the foregoing sections of the California Public Contract Code are set forth in Sections 4106, 4110, and 4111 of the Public Contract Code. A prime contractor violating this law violates his or her contract and the awarding authority may exercise the option, in its own discretion, of (1) canceling his or her contract or (2) assessing the prime contractor a penalty in an amount of not more than 10 percent of the amount of the subcontract involved, and this penalty shall be deposited in the fund out of which the prime contract is awarded. In any proceedings under this section the prime contractor shall be entitled to a public hearing and to five days' notice of the time and place thereof.

ARTICLE 27 – REGISTRATION WITH DEPARTMENT OF INDUSTRIAL RELATIONS

- 27.01 This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code Section 1711.1(a)]. No contractor or subcontractor may be awarded a contract for public work on a public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

END OF SECTION

SECTION 00410

BID FORM FOR CONSTRUCTION CONTRACTS

2024 SODA SPRINGS ROAD WATERLINE REPLACEMENT PROJECT

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ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is submitted to Owner address as identified in Section 00100 – Advertisement.
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
 - A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

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

- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial noncompetitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Amount
1	Mobilization and Demobilization	1	LS	\$	\$
2	Temporary Traffic Control	1	LS	\$	\$
3	Temporary Erosion Control	1	LS	\$	\$
4	8-Inch DR 18 Class 235 C900 PVC Waterline including all fittings	705	LF	\$	\$
5	1-Inch Water Services (connection to existing meter assembly only)	7	EA	\$	\$
6	8-Inch Gate Valve	2	EA	\$	\$
7	Connection to Existing Water Mains (including all transition couplings)	2	EA	\$	\$
8	Remove and Dispose Existing Asbestos Cement Piping (Contingent Bid Item)	20	LF	\$	\$
9	Non-Excavatable Rock Removal (Contingent Bid Item)	30	CY	\$	\$

10	Asphalt Patching (3-Inch AC / 8-Inch AB)	4300	SF	\$	\$
11	Type II Slurry Road Rehabilitation	5700	SF	\$	\$

TOTAL BASE BID PRICE - \$ _____ *In Numbers*

TOTAL BASE BID PRICE - _____ *In Words*

5.02 Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

5.03 Unit Prices have been computed in accordance with Paragraph 13.03.B of the General Conditions.

5.04 The requirements of the State of California Department of Industrial Relations shall apply to this project. The BIDDER is responsible for compliance.

5.05 Evaluation for bid award will be based on the Base Bid.

ARTICLE 6 – TIME OF COMPLETION

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

6.02 Bidder accepts the provisions of the Agreement as to Liquidated Damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

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

- A. Required Bid security in the form of a Bid Bond (EJCDC C-430);
- B. List of Subcontractors required by PCC (Section 00440) ;
- C. Required Bidder Qualifications Statement with supporting data (EJCDC C-451);
- D. Non-collusion Declaration (Section 00453);

- E. Workers' Compensation Statement (Section 00470);
- F. Evidence of authority to do business in Placer County and the State of California;
- G. Contractor's License No.: _____ (may be combined with another attachment);

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature] _____

[Printed name] _____

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature] _____

[Printed name] _____

Title:

Submittal Date: _____

Address for giving notices:

Telephone and Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.:

(where applicable)

END OF SECTION

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

SECTION 00440

LIST OF SUBCONTRACTORS

Provide information pursuant to Section 4104 of the California Public Contract Code.

Work to be Performed	Percentage of Total Contract	Subcontractor's Name, Address, License Number, and Public Works Registration Number
1.		<i>(Subcontractor)</i>
2.		<i>(Subcontractor)</i>
3.		<i>(Subcontractor)</i>
4.		<i>(Subcontractor)</i>
5.		<i>(Subcontractor)</i>
6.		<i>(Subcontractor)</i>
7.		<i>(Subcontractor)</i>

NOTE: Additional numbered pages may be attached if needed.

SECTION 00451
QUALIFICATIONS STATEMENT

THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS

1. SUBMITTED BY:

Official Name of Firm: _____

Address: _____

2. SUBMITTED TO:

3. SUBMITTED FOR:

Owner: _____

Project Name: _____

TYPE OF WORK:

4. CONTRACTOR'S CONTACT INFORMATION

Contact Person: _____

Title: _____

Phone: _____

Email: _____

5. AFFILIATED COMPANIES:

Name: _____

Address: _____

6. TYPE OF ORGANIZATION:

SOLE PROPRIETORSHIP

Name of Owner: _____

Doing Business As: _____

Date of Organization: _____

PARTNERSHIP

Date of Organization: _____

Type of Partnership: _____

Name of General Partner(s): _____

CORPORATION

State of Organization: _____

Date of Organization: _____

Executive Officers:

 President: _____

 Vice President(s): _____

 Treasurer: _____

 Secretary: _____

LIMITED LIABILITY COMPANY

State of Organization: _____

Date of Organization: _____

Members: _____

JOINT VENTURE

Sate of Organization: _____

Date of Organization: _____

Form of Organization: _____

Joint Venture Managing Partner

Name: _____

Address: _____

Joint Venture Managing Partner

Name: _____

Address: _____

Joint Venture Managing Partner

Name: _____

Address: _____

7. LICENSING

Jurisdiction: _____

Type of License: _____

License Number: _____

Jurisdiction: _____

Type of License: _____

License Number: _____

8. CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise: _____

Minority Business Enterprise: _____

Woman Owned Enterprise: _____

Small Business Enterprise: _____

Other (_____): _____

9. BONDING INFORMATION

Bonding Company: _____

Address: _____

Bonding Agent: _____

Address: _____

Contact Name: _____

Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity:
(as of date of this submittal) _____

10. FINANCIAL INFORMATION

Financial Institution: _____
Address: _____
Account Manager: _____
Phone: _____

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

12. SAFETY PROGRAM:

Name of Contractor's Safety Officer: _____

Include the following as attachments:

Provide as an Attachment Contractor's OSHA Form No. 300 and 300A - Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

Total number of man-hours worked for the last 5 Years:

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

Provide Contractor's Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

YEAR _____ DART _____
YEAR _____ DART _____

13. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HEREWITH, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _____ DAY OF _____, 20__

NOTARY PUBLIC - STATE OF _____

COUNTY OF _____

MY COMMISSION EXPIRES: _____

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
5. Evidence of authority for individuals listed in Section 6 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 12.
8. Additional items as pertinent.

SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SECTION 00453

NON-COLLUSION DECLARATION

Per State of California Public Contract Code Section 7106, the following Non-collusion Declaration is to be executed by bidder and submitted with bid.

The undersigned declares:

I am the of, the party making the foregoing bid. _____

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on [date], _____
at _____ [city], _____ [state].”

Signature

SECTION 00470
CONTRACTOR'S CERTIFICATION REGARDING WORKER'S COMPENSATION
INSURANCE

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance 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.

Name of Contractor By:

Signature of Contractor

Date:

NOTICE OF AWARD

Date of Issuance:

Owner:

Owner's Contract No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's

Address:

TO BIDDER:

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

The Contract Price of the awarded Contract is: \$ _____ [note if subject to unit prices, or cost plus]

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

a set of the Drawings will be delivered separately from the other Contract Documents.

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

1. Deliver to Owner [_____] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security [e.g., performance and payment bonds] and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

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

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

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

SECTION 00520
AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between Sierra Lakes County Water District (“Owner”) and _____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The Project Bid generally consists of abandonment of an existing 4-Inch ACP waterline, construction of approximately 705 feet of new 8-Inch PVC waterline, connections to existing waterlines at each end of the new waterline, and replacement of existing water service laterals.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **2024 Soda Springs Road Waterline Replacement Project.**

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Paul A. Schultz, PE.

3.02 The Owner has retained Paul A. Schultz, PE (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Contract Times: Days*

- A. The Work will be substantially completed within 70 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 84 calendar days after the date when the Contract Times commence to run.
- B. The Notice to Proceed shall be issued no later than June 30, 2024. If the Contractor and Owner agree, the Notice to Proceed can be issued anytime between the Notice of Award and June 30, 2024.

- C. The District is subject to excavation restrictions after October 15, 2022. Any Project work for Final Completion after October 15, 2024 must abide by Lahontan Water Quality District Requirements.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
 - 1. Substantial Completion: Contractor shall pay Owner \$ 1,200 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 - 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$ 1,200 for each day that expires after such time until the Work is completed and ready for final payment.
 - 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 [Deleted]

ARTICLE 5 – CONTRACT PRICE

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

- A. For all Work, at the prices stated in Revised Pricing Schedule, attached hereto as an exhibit. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item)

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the **last** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based

on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract:
 - a. 95 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion **of the entire construction to be provided under the Contract Documents**, Owner shall pay an amount sufficient to increase total payments to Contractor to 97.5 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due, as provided in the General Conditions, shall bear interest at the maximum legal rate.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 520-1 to 520-7, inclusive).
 - 2. Performance bond (pages 610-1 to 610-3, inclusive).
 - 3. Payment bond (pages 615-1 to 615-3, inclusive).
 - 4. General Conditions (pages 700-1 to 700-61, inclusive).
 - 5. Supplementary Conditions (pages 800-1 to 800-14, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual. Modified specifications will be prepared and issued by the Engineer reflecting the changes negotiated to the project scope of work and costs.
 - 7. Drawings (not attached but incorporated by reference) consisting of __ sheets with each sheet bearing the following general title: **2024 Soda Springs Road Waterline Replacement Project**. Modified drawings will be prepared and issued by the Engineer reflecting the changes negotiated to the project scope of work.
 - 8. Addenda (numbers * to *, inclusive).
 - 9. Exhibits to this Agreement (enumerated as follows):
 - a. Revised Pricing Schedule.
 - b. Notice of Award.
 - c. Documentation submitted by Contractor prior to Notice of Award (N/A).

10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

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

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to

establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

- 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
- 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

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

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

This Agreement will be effective on _____ (which is the Effective Date of the Contract). **The Effective Date of the Contract stated above and the dates of any construction performance bond (EJCDC® C-610 or other) and construction payment bond (EJCDC® C-615 or other) should be the same, if possible. In no case should the date of any bonds be earlier than the Effective Date of the Contract.**

OWNER:

CONTRACTOR:

Sierra Lakes County Water District

By: Shauna Lorance

By:

Title: General Manager

Title:

Attest:

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

Title:

Attest:

Title:

Address for giving notices:

Address for giving notices:

7300 Short Rd

Soda Springs, CA 95728

License No.:

(where applicable)

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

NOTICE TO PROCEED

Owner: _____ Owner's Contract No.: _____
Contractor: _____ Contractor's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Project: _____ Contract Name: _____
Effective Date of Contract: _____

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20____] [*see Paragraph 4.01 of the General Conditions*]

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is _____] or [the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner: _____

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer



PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: None See Paragraph 16

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

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

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

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

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

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

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

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

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

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

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

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

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

the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

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

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

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

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

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

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

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

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

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

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

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within

two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

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

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

14. Definitions

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

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

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

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

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

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

16. Modifications to this Bond are as follows:

establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

- 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
- 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

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

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

This Agreement will be effective on _____ (which is the Effective Date of the Contract). **The Effective Date of the Contract stated above and the dates of any construction performance bond (EJCDC® C-610 or other) and construction payment bond (EJCDC® C-615 or other) should be the same, if possible. In no case should the date of any bonds be earlier than the Effective Date of the Contract.**

OWNER:

CONTRACTOR:

Sierra Lakes County Water District

By: Shauna Lorance

By:

Title: General Manager

Title:

Attest:

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

Title:

Attest:

Title:

Address for giving notices:

Address for giving notices:

7300 Short Rd

Soda Springs, CA 95728

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: None See Paragraph 18

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

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall

promptly and at the Surety's expense take the following actions:

- 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
- 7.2 Pay or arrange for payment of any undisputed amounts.
- 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph

are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

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

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

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

Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

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

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

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

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

18. Modifications to this Bond are as follows:

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: Sierra Lakes County Water District	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Paul A. Schultz, PE	Engineer's Project No.:
Project: 2024 Soda Springs Road Waterline Replacement Project	Contract Name:

This [preliminary] [final] Certificate of Substantial Completion applies to:

All Work The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows:

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

EXECUTED BY ENGINEER:

RECEIVED:

By: _____
(Authorized signature)

By: _____
Owner (Authorized Signature)

By: RECEIVED:
Contractor (Authorized Signature)

Title: _____

Date: _____

Title: _____ Title: _____ Date: _____

_____ Date: _____

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

SECTION 00700
STANDARD GENERAL CONDITIONS OF THE
CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*:
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,”

“acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

- B. *Evidence of Contractor's Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner's Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

- a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day

after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

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

4.03 *Reference Points*

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

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 Availability of Lands

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas:

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

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
 - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
 - D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and

procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

- b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming

aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review*: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments*:
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one

year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract),

certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.

3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor’s commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor’s pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under

such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. allow for the waiver of the insurer's subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and

- 4) it is not objectionable to Owner.
- b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and

- 3) be suited to the same use as that specified.
- b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the

applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

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

7.09 *Taxes*

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

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

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

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

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

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the

Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*

- a. Contractor shall submit the number of Samples required in the Specifications.
- b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

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

- C. *Other Submittals*: Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review*:
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
 8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. *Resubmittal Procedures*:
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
 2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
 3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner

may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by Engineer;
 - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. use or occupancy of the Work or any part thereof by Owner;
 - 5. any review and approval of a Shop Drawing or Sample submittal;
 - 6. the issuance of a notice of acceptability by Engineer;
 - 7. any inspection, test, or approval by others; or
 - 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

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

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by

Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any)

regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

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

9.03 *Furnish Data*

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

- 9.04 *Pay When Due*
- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.
- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *Limitations on Owner's Responsibilities*
- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

- 10.01 *Owner's Representative*
- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will

not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the

requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 - 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
 - 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 - 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash

discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded*: The term Cost of the Work shall not include any of the following items:
1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee*: When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required

by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for

Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

- c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. Reductions in Payment by Owner:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;

- g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons

therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner

and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 Owner May Terminate for Cause

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are

otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00800
SUPPLEMENTARY CONDITIONS

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC 1.01.A.8 Add the following language at the end of last sentence of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is EJCDC C-941.

SC 1.01.A.48 Add the following language at the end of the last sentence of Paragraph 1.01.A.48:

A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

SC 1.01.A.49 Add the following new Paragraph after Paragraph 1.01.A.48:

49. Abnormal Weather Conditions – Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered Abnormal Weather Conditions.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.06.B Delete paragraph 2.06. and replace it with the term

[Deleted].

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-3.03 Add the following new Paragraph SC-3.03C:

- C. Document Precedence: **In the event of any conflict or inconsistency between any of the Contract Documents, the conflict or inconsistency will be resolved first upon the basis of the numerical order in the listing below. The document or documents assigned the smaller number or numbers will take precedence over any document having a larger number in the numerical order set forth. Although the Reference Standards may be incorporated by reference into other documents, in case of conflict or inconsistency, these Reference Standards have the precedence shown in the numerical order shown below.**
- 1. Engineer’s Written Interpretations or Clarifications.**
 - 2. Change Orders**
 - 3. Written Work Change Directives and Field Orders.**
 - 4. Agreement (Construction Contract).**
 - 5. Addenda.**

6. **Supplementary Conditions.**
7. **Technical Specifications.**
8. **Contract Drawings.**
9. **Bid Form.**
10. **General Conditions (EJCDC C-700).**
11. **Standard Specifications for Public Works Construction.**
12. **Reference Standards.**
13. **Manufacturer's recommendations.**
14. **Instructions to Bidders.**
15. **Documentation submitted by Contractor (if any) prior to Notice of Award.**

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC 4.01.A Amend the last sentence of Paragraph 4.01.A by striking out the following words:

In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier. Notice to Proceed will be given at the Preconstruction Conference. The Notice to Proceed date may need to be adjusted due to issues of material deliveries, etc.

SC 4.05.C.2 Amend Paragraph 4.05.C.2 by striking out the following text: **“abnormal weather conditions;”** and inserting the following text:

Abnormal Weather Conditions;

ARTICLE 5 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03. Add the following new paragraph immediately after Paragraph 5.03.B:

- C. **The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:**
 1. **Reports: “Geotechnical Engineering Report for Sierra Lakes 2008 Capital Improvement Projects”.**
 - a. **The Technical Data contained in such report upon whose accuracy Contractor may rely are: Representative of General Area and not**

intended to represent an exploration or documentation of Project specific site conditions.

- D. The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:
 - 1. Drawings: None
 - a. None of the contents of such drawings is Technical Data on whose accuracy Contractor may rely.

SC-5.06 Add the following subparagraphs 5.06.A.1 and 5.06.A.2:

- 3. The following reports regarding Hazardous Environmental Conditions at the Site are known to Owner:
 - a. Report: None
- 4. The following drawings regarding Hazardous Environmental Conditions at the Site are known to Owner:
 - a. Drawings: None.
 - b. None of the contents of such drawings is Technical Data on whose accuracy Contractor may rely.

ARTICLE 6 - BONDS AND INSURANCE

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

- 1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
 - 1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>

Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	\$ <u>1,000,000</u>
Bodily injury by disease, aggregate	\$ <u>1,000,000</u>

Employer's Liability:	
Bodily injury, each accident	\$ <u>1,000,000</u>
Bodily injury by disease, each employee	\$ <u>1,000,000</u>
Bodily injury/disease aggregate	\$ <u>1,000,000</u>

For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	\$ <u>N.A.</u>
Foreign voluntary worker Compensation	\$ <u>N.A.</u>

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	\$ <u>2,000,000</u>
Products - Completed	
Operations Aggregate	\$ <u>1,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Combined Single Limit of	\$ <u>1,000,000</u>
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4. Excess or Umbrella Liability:

Per Occurrence	\$ <u>5,000,000</u>
General Aggregate	\$ <u>5,000,000</u>

5. Contractor's Pollution Liability:

Each Occurrence	\$ <u>N.A.</u>
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General Aggregate \$ N.A.

If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner and Engineer whose information is provided below, include as additional insureds the following:

Sierra Lakes County Water District 7305 Short PO Box 1039 Soda Springs, CA 95728	Farr West Engineering 5510 Longley Ln Reno, Nevada 89511
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7. Contractor's Professional Liability:

Each Claim	\$ <u>N.A.</u>
Annual Aggregate	\$ <u>N.A.</u>

8. Additional types and amounts of insurance required include: None.

SC-6.05.A. Delete Paragraph 6.05.A in its entirety.

ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

SC-7.02.B. Add the following new subparagraphs immediately after Paragraph 7.02.B:

1. Regular working hours will be 8:00 AM to 5:00 PM Monday through Friday.
2. Owner's legal holidays are as defined by Placer County, California.

SC-7.02.B. Add the following new paragraph immediately after Paragraph 7.02.B:

C. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.02.C. Add the following new subparagraph immediately after Paragraph 7.02.C:

1. **For purposes of administering the foregoing requirement, additional overtime costs are defined as any daily or weekly overtime hours as defined by the labor commission.**

SC 7.04.A Amend the third sentence of Paragraph 7.04.A by striking out the following words:

Unless the specification or description contains or is followed by words reading that no like, equivalent, or 'or-equal' item is permitted.

SC 7.04.A.1 Amend the last sentence of Paragraph a.3 by striking out “and;” and adding a period at the end of Paragraph a.3.

SC 7.04.A.1 Delete paragraph 7.04.A.1.a.4 in its entirety and insert the following in its place:

[Deleted]

SC 7.06.A Amend Paragraph 7.06.A by adding the following text to the end of the Paragraph:

The Contractor shall not award work valued at more than fifty percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC 7.06.B Delete paragraph 7.06.B in its entirety and insert the following in its place:

[Deleted]

SC 7.06.E Amend the second sentence of Paragraph 7.06.E by striking out “**Owner may also require Contractor to retain specific replacements; provided, however, that**”.

ARTICLE 9 – OWNER’S RESPONSIBILITIES

SC-9.13 Add the following new paragraph immediately after Paragraph 9.12 of the General Conditions:

- A. **Owner will furnish an “Owner’s Site Representative” to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner’s Site Representative is not Engineer’s consultant, agent, or employee. Owner’s Site Representative will be assigned in a preconstruction meeting. The authority and responsibilities of Owner’s Site Representative follow: regular site visits, attend meetings, approve schedules and work plans, accept work, approve payment and change orders on behalf of the owner.**

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A.:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.**
- 1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.**
 - 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.**
 - 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.**
 - 4. Liaison:**
 - a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.**
 - b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.**
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.**
 - 5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.**
 - 6. Shop Drawings and Samples:**
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.**
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.**

- c. **Maintain records for use in preparing Project documentation.**

11. Reports:

- a. **Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.**
- b. **Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.**
- c. **Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.**

- 12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.**

- 13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.**

14. Completion:

- a. **Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.**
- b. **Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.**
- c. **Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.**

C. The RPR shall not:

- 1. **Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).**

2. **Exceed limitations of Engineer's authority as set forth in the Contract Documents.**
3. **Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.**
4. **Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.**
5. **Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.**
6. **Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.**
7. **Accept Shop Drawing or Sample submittals from anyone other than Contractor.**
8. **Authorize Owner to occupy the Project in whole or in part.**

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC 13.01.B.5.c Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

c. Construction Equipment and Machinery:

- 1) **Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.**
- 2) **Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the *Rental Rate Blue Book, current edition*. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000 will be considered small tools.**

SC 13.02.C Delete Paragraph 13.02.C in its entirety and insert the following in its place:

[Deleted]

SC 13.03.E Delete Paragraph 13.03.E in its entirety and insert the following in its place:

- E. The unit price of an item of Unit Price Work shall be subject to reevaluation if it is not designated as a contingent bid item and adjustment under the following conditions:**
- 1. if the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 20 percent from the estimated quantity of such item indicated in the Agreement; and**
 - 2. if there is no corresponding adjustment with respect to any other item of Work; and**
 - 3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.**

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC 15.01.B.1 Amend the second sentence of Paragraph 15.01.B.1 by striking out the following text: **“a bill of sale, invoice, or other.”**

SC 15.01.B.3 Add the following language at the end of paragraph 15.01.B.3:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

SC 15.01.B.4 Add the following new Paragraph after Paragraph 15.01.B.3:

The Application for Payment form to be used on this Project is EJCDC C-620. SC 15.01.D.1 Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:

The Application for Payment with Engineer’s recommendations will be presented to the Owner for consideration. If the Owner finds the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due thirty (30) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC 15.02.A Amend Paragraph 15.02.A by striking out the following text: “no later than seven days after the time of payment by Owner” and insert “no later than the time of payment by Owner.”

SC 15.03.B Add the following new subparagraph to Paragraph 15.03.B:

1. **If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.**

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

SC-17.02 Arbitration

- A. **Arbitration shall occur only if both parties agree to pursue arbitration.**
- B. **All matters subject to final resolution under this Article will be decided by arbitration in accordance with the rules of Hon. Jerry Whitehead, Mediation & Arbitration Services, subject to the conditions and limitations of this paragraph. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.**
- C. **The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitrator or arbitration provider, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in this Article, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations. The demand for arbitration should include specific reference to Paragraph SC-17.02.D below.**
- D. **No arbitration arising out of or relating to the Contract shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer’s consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:**
 1. **the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and**
 2. **such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.**

- E. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties, in writing, and include a concise breakdown of the award, and a written explanation of the award specifically citing the Contract provisions deemed applicable and relied on in making the award.**
- F. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.**
- G. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor.**

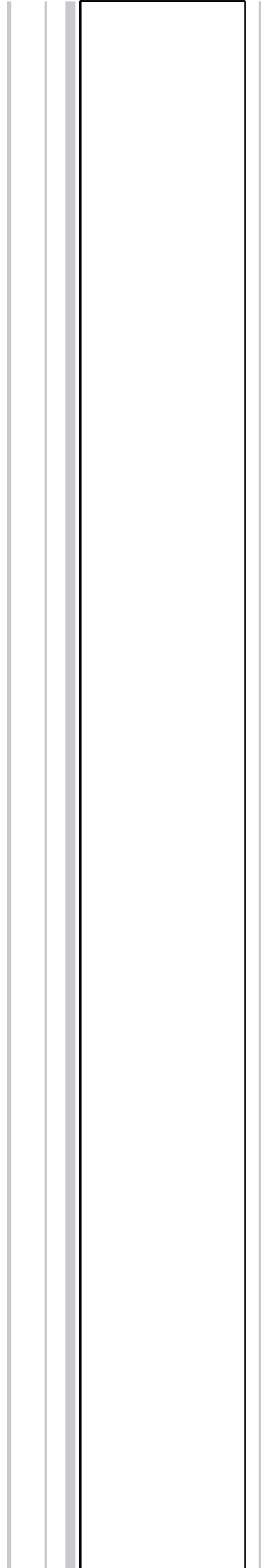
SECTION 00880
WAGE RATE REQUIREMENTS

The State of California prevailing wage rates for this Public Works project, which is located in Placer County, may be found at the following website address of the California Department of Industrial Relations:

[Director's General Prevailing Wage Determinations \(ca.gov\)](#)

The prevailing wages for this project are those that are in effect on the date that the bids are due.

Division 1 – General Requirements



SECTION 01110
SUMMARY OF WORK

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes: General administrative and procedural requirements, responsibilities, sequencing requirements, and project and site condition information relevant to the Project.
- B. Related Sections:
 - 1. Section 00520 – Agreement
 - 2. Section 01330 – Submittal Procedures
 - 3. Section 01720 – Field Surveying

1.02 STANDARD SPECIFICATIONS

- A. Placer County, California, General Specifications, April 2018 Version.
- B. “AWWA Standards,” American Water Works Association, Denver, Colorado, As Approved.
- C. National Sanitation Foundation (NSF) Standards.
- D. Uniform Plumbing Code, Latest Edition.
- E. OSHA: Occupational Safety and Health Administration: Part 1926

1.03 PROJECT DESCRIPTION

- A. This Project is generally described in Article 1 of Section 00520 – Agreement.

1.04 SUBMITTALS

- A. Refer to Section 01330 – Submittal Procedures for general submittal requirements.
- B. Written designation of:
 - 1. Contractor representative with authority to sign project paperwork (Requests for Information, Field Orders, Change Orders, Daily Quantities, Progress Payments, Force Account Form, etc.).
 - 2. Contractor emergency 24-hour contact representative.
 - 3. Contractor representative to be in responsible charge of onsite work.

- C. Emergency Management Plan.
- D. SDS forms (if applicable).
- E. Permits Obtained for the Project.

1.05 PROJECT / SITE CONDITIONS

A. Location of Work: The work is located within the Sierra Lakes County Water District. Work site is located within and along roadways within residential neighborhoods. Refer to Sheet C1.1 in the drawings for specific locations of work. See Appendix A for geotechnical information.

1.06 HOURS OF WORK AND CONSTRUCTION PERIODS

- A. Work hours are between 8:00 a.m. and 5:00 p.m. Monday through Friday, excluding national holidays and special events.
- B. Work can begin when Notice to Proceed is issued.

1.07 PERMITS, EASEMENTS, AND LICENSES

- A. The Owner shall secure and pay for the following:
 - 1. Placer County Encroachment Permit
- B. The Contractor shall acquire and pay for all permits not provided by Owner and all specialty permits (if necessary), including but not limited to:
 - 1. Air Quality Permit.
 - 2. Water Pollution Control Plans.
 - 3. Business License (Placer County).
 - 4. All other permits of a temporary nature relating to the construction of the project as required.

1.08 CONTRACTOR'S DUTIES

- A. Except as specifically noted, provide and pay for:
 - 1. Labor, materials, and equipment.
 - 2. Tools, construction equipment, machinery, and fuel.
 - 3. Water, heat, and utilities required for construction.
 - 4. Other facilities and services necessary for proper execution and completion of Work.
- B. Pay legally required sales tax, consumer use tax, and other taxes as may be required by law.

- C. Give required notices.
- D. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of Work.
- E. Promptly submit written notice to Owner of observed variance of Contract Documents from legal requirements. It is not Contractor's responsibility to make certain that Drawings and Specifications comply with codes and regulations.
- F. Enforce strict discipline, safety, and good order among employees.
- G. Do not employ persons who are not skilled in assigned task.
- H. Equipment and Work Furnished by Contractor
 - 1. All gates, barricades, fences, handrails, guardrails, and security required by the Contract or by laws and regulations.
 - 2. Sanitary facilities adequate for all workers and complying with all codes and regulations.
 - 3. Guards, marks, shields, protective clothing, raingear, and other equipment required by law, ordinance, labor contracts, OSHA, and other regulations for the maintenance of health and safety.
 - 4. Emergency Management Plan.
 - 5. Applicable SDS forms.
 - 6. First aid kits and equipment required by law and regulations.

1.09 OWNER PROVIDED MATERIALS

- A. Owner will procure and provide the following materials for installation by the Contractor. See the Price and Payment Section for additional information.
 - 1. None.

1.10 OWNER'S INSTRUCTIONS

- A. Use of Premises
 - 1. The Contractor shall enforce any instructions of the Owner regarding signs, advertising, fires, danger signals, barricades, and smoking; and shall require all persons employed on the Work to comply with all building, post, or institutional regulations while on the premises.
 - 2. The Contractor shall not permit any part of any structure to be loaded with a weight that will injure its safety.
 - 3. Confine operations at site to areas permitted by:

- a. Laws.
- b. Ordinances.
- c. Permits.
- d. Contract Documents.
- e. Right-of-Way/Easements.

1.11 COORDINATION OF WORK

- 1. Contractor shall maintain overall coordination of all Project work.
- 2. Contractor shall obtain construction schedules from each subcontractor and require each subcontractor to maintain schedules and coordinate modifications.
- 3. Owner, utilities, and others may perform activities within Project area while Work is in progress. The Contractor shall provide for coordination of his work with his subcontractors' work with Owner, affected utilities, and others.
 - a. When cooperation issues arise, submit recommendations to Engineer and perform Work in coordination with work of others as directed.
- 4. Interruption of any existing utilities requires prior Owner approval.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01200
PRICE AND PAYMENT PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

- A. Administration and procedural requirements for processing applications for payment and pricing of work.
- B. Related Sections:
 - 1. Section 00410 – Bid Form
 - 2. Section 00880 – Wage Rate Requirements
 - 3. Section 01330 – Submittal Procedures

1.02 SUBMITTALS

- A. Applications for Partial Payment.
- B. Certified Payroll Reports and Associated Substantiating Data.
- C. Schedule of Values.

1.03 MEASUREMENT PROCEDURES

- A. Measurements of the completed work shall be in accordance with, and by instruments and devices calibrated to United States Standard Measures and the units of measurement for payment, and the limits thereof, shall be made as shown on the Plans, Specifications, General Requirements, and Supplementary Conditions.
- B. Measurements shall be in accordance with U.S. Standard Measures.
- C. Certified Weights: When payment is to be made since weight, the weighing shall be done on certified platform scales, or when approved by the Owner or Engineer, on a completely automated weighing and recording system. The Contractor shall furnish Owner or Engineer with duplicate licensed weigh master's certificates showing the actual net weights. The Owner or Engineer will accept the certificates as evidence of the weights delivered.
- D. Methods of Measurement
 - 1. Materials and items of Work which are to be paid for on the basis of measurement shall be measured in accordance with the method stipulated in the particular sections involved. In determining quantities, all measurements shall be made in a horizontal plane unless otherwise specified.

2. Material not used from a transporting vehicle shall be determined by the Owner or Engineer and deducted from the certified tag.
3. When material is to be measured and paid for on a volume basis and it would be impractical to determine the volume, or when requested by the Contractor in writing and approved by the Owner or Engineer in writing, the material will be weighed and converted to volume measurement for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Owner or Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities will be adopted.
4. Full compensation for all expense involved in conforming to the above requirements for measuring and weighing materials shall be considered as included in the unit prices paid for the materials being measured or weighed and no additional allowances will be made therefore.
5. Quantities of material wasted or disposed of in a manner not called for under the Contract; or rejected loads of material, including material rejected after it has been placed by reason of failure of the Contractor to conform to the provisions of the Contract; or material not unloaded from the transporting vehicle; or material placed outside the lines indicated on the plans or given by the Owner or Engineer; or material remaining on hand after completion of the Contract, will not be paid for and such quantities will be deducted from the final total quantities. No compensation will be allowed for hauling rejected material.

E. Measurement of Quantities

1. Weekly construction quantity resolution.
 - a. Contractor to submit a weekly estimate of quantities constructed to the Engineer or Project Representative.
 - b. Engineer or Project Representative will review construction quantity estimate and resolve discrepancies with Contractor on a weekly basis.
 - 1) Contractor to use Weekly Quantity Installed Certification Form provided by Engineer. Form to be signed by Contractor and Project Representative.
2. Work paid at a unit price times number of units measured will be measured by Engineer in accordance with United States Standard Measures.
3. Provide and pay for accurate scales.
 - a. Use platform scales of sufficient size and capacity to permit the entire vehicle or combination of vehicles to rest on the scale platform while being weighed.
 - b. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed.
 - c. Have scales inspected and certified as often as necessary to ascertain accuracy.

- d. Furnish weigh slips and daily summary weigh sheets to Engineer.
4. When material is shipped by rail, certified car weights will be acceptable, provided that not more than the actual weight of material will be paid, without consideration of minimum car weight used for assessing freight tariff.
 - a. Car weight will not be acceptable for materials passing through mixing plants.
5. Daily, or at shorter intervals when necessary to ensure accuracy, weigh empty trucks used to haul material paid by weight.
 - a. Provide such trucks with plainly, unique, permanent, legible, identification marks.
6. Reinforcing steel, steel shapes, castings, and similar items paid by weight will be measured by handbook weights for the type and quantity indicated for the Work.

1.04 PAYMENT PROCEDURES

- A. The Contractor is specifically cautioned that the location and/or elevation of existing utilities and features as shown on these improvement plans is based upon the best information available to the Engineer. The information is not to be relied on as being exact or complete.
 1. It shall be the Contractor's responsibility to verify these locations and/or elevations by potholing at the proposed points of connection and in areas of possible conflict prior to beginning construction.
 2. Should the Contractor find any discrepancies between the conditions existing in the field and the information shown on the improvement plans, the Contractor shall immediately notify the Engineer.
 3. Contractor shall pothole, for no direct payment, sufficiently in advance of construction to allow three (3) working days for Engineer to prepare a redesigned plan should a conflict be encountered. Absolutely no standby time will be paid to the Contractor during this three (3) day redesign period.
- B. Bid Items
 1. The Bid Amounts for each Bid Item will be used for comparative bid analysis. The Bid amounts will also form the basis of monthly progress payments. Each Lump Sum bid amount will undergo further breakdown as described later in this section. Bid items are not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, and equipment necessary to complete each Bid Item (work phase) as shown and specified.
 2. Payment for the bid items identified in the Bid Schedule, as further described herein, will constitute full compensation to the Contractor for furnishing all labor, equipment, tools, supplies and materials to complete the Work in accordance with the Contract Documents,

including the costs of permits and the costs of compliance with the regulations of public agencies having jurisdiction. Any item that is not specifically set forth in the Bid Schedule shall be considered incidental to the cost of the Work. The final pay quantities shall be by field measurement.

3. The bid items shown in the Bid Schedule shall include as incidental those efforts of similar magnitude and not limited to the following: obtaining permits; removing and replacing old utilities or hardware; clean-up work; dewatering work; resetting disturbed property corners and survey monument replacement; shoring utility poles; surface grading on disturbed or damaged driveways and ditches; grading disturbed areas; contract staging areas; miscellaneous code, law, or public health requirements; dust control; road maintenance and repair; protection of existing improvements; removal of existing surfaces; coordination with public, owner or other affected agencies; removal of spoils; disposal costs; material testing; compliance with standard and manufacturer specifications; and overhead and profit.
4. In the case of change or deletion of the unit quantity contract item (or items) in the Bid Schedule, the contract value will be adjusted to reflect actual quantities installed versus the estimated quantities reflected in the contract price. Due to the nature of the work performed on this project, any and all of the estimated quantities shown on the Bid Schedule may be adjusted up or down any amount or may be deleted at the Engineer's request prior to or while the work is in progress. Changes in quantities shall not change the unit price contract.
5. The intent of these specifications is to provide a complete and operational project. Incidental items, such as potholing, casing adapters, flanged coupling adapters, couplings, pipe reducers, thrust blocks, removal of abandoned equipment, location tape, test fittings, and all other items necessary to provide a complete project, but not specifically mentioned, shall be considered incidental to the above items.

C. Application for Payment

1. Format
 - a. Develop satisfactory spreadsheet-type form.
 - b. Fill in information required on form.
 - c. When Change Orders are executed, include Change Orders in the Application for Payment.
 - 1) Identify Change Order by number and description.
 - 2) Provide cost of Change Order in appropriate column.
 - d. Execute application with signature of responsible officer of Contractor.
 - e. After completing, submit Application for Payment to Engineer.

- f. Engineer will review application for accuracy. When accurate, Engineer will transmit application to Owner for processing of payment.
2. Substantiating Data
- a. Provide Substantiating Data with cover letter identifying:
 - 1) Project.
 - 2) Application number and date.
 - 3) Detailed list of enclosures.
 - 4) For stored products with item number and identification on application, description of specific material, and proof of insurance coverage for offsite stored products.
 - b. Submit “certified” payroll.
3. Procedure
- a. Prepare progress payment requests monthly on a date acceptable to Owner.
 - b. Base requests on the breakdowns of costs for each scheduled activity and the percentage of completion for each activity.

1.05 SCHEDULE OF VALUES

- A. Submit to the Engineer a Schedule of Values (preferably in Microsoft Excel format), at least 15 days prior to submitting first Application for Payment.
- B. Format
 - 1. Identify each line item in the Schedule of Values with number and title of the major specification sections.
 - 2. The Schedule of Values shall be by structure, civil, landscaping, or other logical division of work. The cost breakdown for architectural, structural, mechanical, and electrical work shall include separate items for identifiable portions of the structures.
- C. The Schedule of Values shall assign a fair, reasonable, and equitable dollar value for each activity on the Contractor’s Progress Schedule. The Schedule of Values shall include anticipated progress payments for each item in the Bid Form through the final payment and include a detailed breakdown of lump sum prices.
- D. The Schedule of Values shall specifically indicate installed cost for materials and equipment for each bid item.

- E. Each activity's assigned value shall consist of labor, equipment and materials cost and a prorate contribution to overhead and profit. Breakdown shall be so organized as to facilitate assessment of Work and payment of subcontractors.
- F. The sum of the assigned values shall equal the lump sum price of the activity.
- G. No single item of worth listed in the cost breakdown shall exceed 5 percent of the total lump sum cost. Items exceeding 5 percent shall be broken down into further detail, except in cases where material costs for individual items of equipment exceed the 5 percent limit.
- H. The cost breakdown will be subject to the approval of the Owner or Engineer, and upon request, the Contractor shall substantiate the price for any or all items and provide additional level of detail, including quantities of work. The cost breakdown shall be sufficiently detailed to permit its use by the Owner or Engineer as one of the bases for evaluating requests for payments. The Owner or Engineer shall be the sole judge of the adequacy of the cost breakdown.
- I. The cost breakdown shall be solely used to determine progress payments. The cost breakdown shall not be considered in determining payment or credit for additional or deleted work.

1.06 BID ITEM GENERAL REQUIREMENTS

- A. General Requirements shall apply to any and all applicable bid items.
- B. There shall be no direct payment for the following items. Compensation for the items listed below shall be considered to be included in the price bid for other items of work which are most applicable and no additional compensation will be allowed to the Contractor for this work.
 - 1. Photographic / Video records of construction area per Section 01590 – Protection of Existing Property and Facilities.
 - 2. Support of utility poles to perform the construction operations.
 - 3. Dewatering and disposal of groundwater.
 - 4. Shoring of excavations.
 - 5. Support and protection of existing utilities and backfill to perform construction operations.
 - a. Contractor is responsible for maintaining trench integrity during excavation of proposed utilities, including adjacent utility installations. Contractor shall repair existing utilities if negatively impacted by construction activities.
 - 7. Exploratory excavations or investigations to locate utilities (including conflicting utilities) to perform construction operations.
 - 8. Special construction required per CalEPA's requirements for water main and non-potable piping separation to perform construction operations.

9. Maintaining access to all driveways by dropping forms and/or placing steel plates throughout construction.
10. Clearing and grubbing to perform construction operations.
11. Hand digging, root trimming, and root mitigation to perform construction activities near trees.
12. Installing and/or replacing fencing (permanent fencing or temporary construction fencing) to perform construction activities.
13. Removal and replacement of any signs, mailboxes, roadway/utility markers, bollards, or lighting.
14. Installation of any survey monuments disturbed during construction.
15. Surface Restoration
 - a. Softscape surface restoration (public or private) shall return to equal or better condition. Surface restoration shall include, but not be limited to, landscaping (including, but not limited to, sod, shrubs and bushes, trees, landscape curbs, irrigation piping, decorative rock, and landscape lighting); and other soft-scape materials for driveway, roadway, and property surfacing. Existing site drainage shall be maintained at all times.
 - b. Temporary patching (hot mix, cold mix, or aggregate base) required per the contract documents.
 - c. Asphalt patches required due to potholing on any other exploratory excavations required due to construction activities.
 - d. "Hardscape" shall be defined as asphalt and concrete surfaces. Payment for permanent hardscape surface restoration shall be included under separate bid items listed in Part 2.

PART 2 – BID ITEMS

2.01. BID ITEMS 1: MOBILIZATION AND DEMOBILIZATION

- A. No specific unit of measurement shall apply to the lump sum item "Mobilization and Demobilization".
- B. The lump sum bid price for "Mobilization and Demobilization" shall constitute full compensation for all labor, equipment, tools, supplies and materials to complete this item, including, but not limited to, obtaining all bonds, permits, and licenses; moving equipment and materials onto and off the site; provision of sanitary facilities, furnishing and erecting construction trailers and other

construction facilities; and all preparatory work as required for the proper performance and completion of the project, including work items not identified in a separate bid item.

1. When the project office has been established, temporary erosion control measures established, and equipment has been moved in, sixty percent (60%) of the bid item amount will be paid.
2. When ten percent (10%) of the total original Contract amount is earned from other bid items, ninety percent (90%) of the bid item amount will be paid.
3. The remaining ten percent (10%) of the bid item will be paid once the Contractor has demobilized and completed all site restoration work to the satisfaction of the Owner.

2.02 BID ITEMS 2: TEMPORARY TRAFFIC CONTROL

- A. No specific unit of measurement shall apply to the lump sum item “Temporary Traffic Control”.
- B. The lump sum bid price for “Temporary Traffic Control” shall constitute full compensation for all labor, equipment, tools, supplies and materials to complete this item, including, but not limited to, preparation and distribution of traffic control plans in compliance with the latest requirements from the governing jurisdiction, notices and reports to public and businesses; setup, removal and maintenance of all barricades, signs (including custom signs), channelizing devices, barrel cones, flag persons, detours, arrow boards, and message boards; lights, temporary striping; temporary paving; and temporary aggregate base; all in accordance with the Contract Documents.
- C. There shall be no additional payment for changes in the traffic control plan resulting from changes in the Contractor’s work method or schedule. Payment for traffic control shall be made at the contract unit price bid per lump sum for entire project.

2.03. BID ITEMS 3: TEMPORARY EROSION CONTROL

- A. No specific unit of measurement shall apply to the lump sum item “Temporary Erosion Control”.
- B. The lump sum bid price for “Temporary Erosion Control” shall constitute full compensation for all labor, equipment, tools, supplies and materials to complete this item, including, but not limited to, installation, maintenance, repair, and removal of erosion control and tree protection measures as specified on the Drawings and Specifications, as well as all costs associated with the Contractor’s erosion control plan and coordination with local regulatory agencies; all in accordance with the Contract Documents.

2.04 BID ITEM 4: 8-INCH DR 18 Class 235 C900 PVC Waterline

- A. Measurement of payment for “8-INCH DR 18 Class 235 C900 PVC Waterline” shall be per linear foot.
- B. Payment for “8-INCH DR 18 Class 235 C900 PVC Waterline” shall constitute full compensation for all materials, labor, equipment, tools, and incidentals necessary to construct the new waterline.

- C. Cost for removal and disposal of existing PVC and ductile iron pipe is included in the bid item. If removal of asbestos cement pipe is necessary, the additional cost to remove, mitigate, document, transport, and dispose of asbestos cement pipe shall be included under separate “Remove and Dispose of Existing ACP Piping” bid item.
- D. Abandonment of existing infrastructure is included in payment item “8-Inch DR 18 Class 235 C900 PVC Waterline including all fittings”.
- E. Refer to section 1.06 for work items receiving no direct payment.
- F. Temporary patching and softscape surface restoration is included in this payment application. Permanent hardscape restoration for this work shall be paid under separate bid items.
- G. Refer to section 1.06 for work items receiving no direct payment.

2.05 BID ITEM 5: 1-INCH WATER SERVICES (CONNECTION TO EXISTING METER ASSEMBLY ONLY)

- A. Measurement for payment for “1-INCH WATER SERVICES (CONNECTION TO EXISTING METER ASSEMBLY ONLY)” shall be per each.
- B. Payment for “1-INCH WATER SERVICES (CONNECTION TO EXISTING METER ASSEMBLY ONLY)” shall constitute full compensation for all materials, labor, equipment, tools, and incidentals necessary to construct the new services.
- C. Refer to section 1.06 for work items receiving no direct payment.

2.06 BID ITEM 6: 8-INCH GATE VALVE

- A. Measurement for payment for “8-INCH GATE VALVE” shall be per each.
- B. Payment for “8-INCH GATE VALVE” shall constitute full compensation for all materials, labor, equipment, tools, and incidentals necessary to install the new valves.
- C. Refer to section 1.06 for work items receiving no direct payment.

2.07 BID ITEM 7: CONNECTION TO EXISTING WATERMAINS (INCLUDING ALL TRANSITION COUPLINGS)

- A. Measurement for payment for “CONNECTION TO EXISTING WATERMAINS (INCLUDING ALL TRANSITION COUPLINGS)” shall be per each.
- B. Payment for “CONNECTION TO EXISTING WATERMAINS (INCLUDING ALL TRANSITION COUPLINGS)” shall constitute full compensation for all materials, labor, equipment, tools, and incidentals necessary to complete the new connections.
- C. Refer to section 1.06 for work items receiving no direct payment.

- C. Refer to section 1.06 for work items receiving no direct payment.

2.08 BID ITEMS 8: REMOVE AND DISPOSE EXISTING ASBESTOS CEMENT PIPING (CONTINGENT ITEM)

- A. Measurement for payment for “Remove and Dispose Existing Asbestos Cement Piping” shall be per linear foot of pipe.
- B. Payment for “Remove and Dispose Existing Asbestos Cement Piping” shall constitute full compensation for all labor, equipment, tools, supplies and materials required to complete this item, including, but not limited to, mitigation, transport and disposal effort for and specific to asbestos concrete pipe; all in accordance with the Contract Documents.
- C. Basic removal and disposal efforts for the pipe will be paid for under the applicable water installation / abandonment bid item; therefore, this bid item shall apply specifically only for additional effort to remove, mitigate, document, transport, and dispose of asbestos cement pipe (laterals and / or mains) beyond that required for removal and disposal of other piping materials.
- D. Removal of asbestos concrete pipe shall be performed only when necessary for construction.
- E. This item shall be considered a contingent item and shall be used at the Owner’s discretion. The quantity indicated in the base bid schedule of values represents estimates based off the Owner’s record documents, is nominal only, and may be greatly increased or decreased or reduced to zero. The price increase or reduction of this quantity as compared with that contained in the base bid schedule of values shall not constitute a basis for claim by the Contractor for extra payment or changed conditions.
- F. Refer to section 1.06 for work items receiving no direct payment.

2.09 BID ITEM 9: NON-EXCAVATABLE ROCK REMOVAL (CONTINGENT BID ITEM)

- A. Measurement for payment for Non-Excavatable Rock Removal will be based on the actual cubic yard rock to be removed.
- B. Payment for Non-Excavatable Rock Removal will be at the unit price named in the Bid Schedule, which price shall constitute full compensation for furnishing all labor, materials, tools, equipment and incidentals, for doing all the work involved in the delineation, excavation, hydraulic hammering, drilling and blasting or splitting of rock, protection and repair of existing improvements, transport of spoils to an approved stockpile area (if required), off-haul and disposal of rock, and import of removed rock with suitable backfill material. Payment shall also include 4 hours of test pit excavation by the Contractor along the water main alignment to determine limits of rock excavation as defined by Section 02315 – Excavation & Backfill. Test pit excavation must be witnessed by the Owner and Engineer.

- C. Trench rock excavation will be paid for as an additional cost above and beyond trenching cost included as part of pipe installation. Rock removed prior to the Owner's or Engineer's approval shall not be paid for under this item.
- D. This item shall be considered a contingent item. The quantity indicated in the bid schedule represents no actual estimate, is nominal only, and may be greatly increased or decreased or reduced to zero. The increase or reduction of this quantity, as compared with that contained in the bid schedule, shall not constitute a basis for claim by the Contractor for extra payment or changed conditions.
- E. Refer to section 1.06 for work items receiving no direct payment.

2.10 BID ITEMS 10: PERMANENT ASPHALT PATCHING (3-INCH AC / 8-INCH AB)

- A. Measurement for payment for "Permanent Asphalt Patching (3-Inch AC / 8-Inch AB)" shall be per square foot of asphalt cement pavement installed.
- B. Payment for "Permanent Asphalt Patching (3-Inch AC / 8-Inch AB)" shall constitute full compensation for all materials, labor, equipment, tools, supplies and materials required to complete this item, including, but not limited to, saw cutting; excavating and removal of existing asphalt pavement; subgrade preparation; furnishing, placing, and compaction of aggregate base materials; furnishing and placing tack coat; furnishing, placing, and compaction of new hot mix asphalt concrete pavement; protection against vandalism, temporary access ramps, and incidentals necessary to complete each item as specified, all in accordance with the Contract Documents.
- C. There shall be no direct payment for asphalt patches required due to potholing on any other exploratory excavations.
- D. Refer to section 1.06 for work items receiving no direct payment.

2.11 BID ITEM 11: TYPE II SLURRY ROAD REHABILITATION

- H. Measurement for payment for "Type II Slurry Road Rehabilitation" shall be per square foot of slurry seal road rehabilitation installed.
- I. Payment for "Type II Slurry Road Rehabilitation" shall constitute full compensation for all materials, labor, equipment, tools, supplies and materials required to complete this item in accordance with the Contract Documents.
- J. Refer to section 1.06 for work items receiving no direct payment.

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01312
PROJECT MEETINGS

PART 1 – GENERAL

1.01 SUMMARY

- A. Information for meetings held during construction including necessary attendees and agenda items.
- B. Related Sections:
 - 1. Section 01330 – Submittal Procedures

1.02 SUBMITTALS

- A. Refer to Section 01330 – Submittal Procedures for general submittal requirements.
- B. Contractor safety meeting agenda, minutes, and attendance log.

1.03 PRECONSTRUCTION CONFERENCE

- A. Schedule, Attendees, Location:
 - 1. Not more than 5 days after “Notice to Proceed” but earlier if practical, the District will schedule a preconstruction meeting.
 - 2. Attendees:
 - a. Contractor representatives including the official in charge of the project, the project superintendent, a representative with authority to speak for each of his principle subcontractors, and other representatives as he may deem expedient.
 - b. District.
 - c. Representatives of regulatory or other jurisdictions (optional based on preference of agency).
 - d. Engineer.
 - e. Representatives of selected utilities.
 - 3. The preconstruction conference will be held at a District facility.
 - 4. Minutes of meeting will be prepared by the Engineer or District and distributed to interested parties.
- B. Agenda:

1. Both District and Contractor shall be prepared to speak to the following:
 - a. Name and field address of job superintendent.
 - b. Communication procedures.
 - c. Emergency phone and/or operator.
 - d. Date of construction start.
 - e. Date of Notice-to-Proceed.
 - f. Notification of utilities concerned, fire, police, schools, etc.
 - g. Subcontractors:
 - 1) Paving.
 - 2) Other.
 - h. Coordination with other contractors.
 - i. Permits, where applicable:
 - 1) Construction Stormwater General Permit.
 - 2) Other permits.
 - j. Engineering assignments.
 - k. Construction Observers: Names and authority.
 - l. Field office (location).
 - m. Construction progress schedule (C.P.M.).
 - n. Schedule of Values.
 - o. Submittals and Schedule of Submittals.
 - p. Surveying and responsibility for lines and grades.
 - q. Prevailing wage rates related submittal requirements.
 - r. Equal employment opportunities (EEO) and posting of EEO poster. Use of local labor.
 - s. Nondiscrimination notice.
 - t. Periodic monthly payments including date for submittal and forms.

- u. Safety requirements, confined space, and special hazards.
- v. Insurance and bonds.
- w. Traffic control.
- x. Drawings revised to conform to construction records.
- y. Operation and maintenance manuals.
- z. Testing.
- aa. Location, timing, and content of progress meetings. bb. Contractor safety meetings. cc. Neighbors, citizen issues. dd. Complaint procedure. ee. Staging areas and parking. ff. Work hours. gg. Substantial Completion. hh. Construction milestones. ii. Project closeout.
- jj. Other matters concerning construction.

1.04 PROGRESS MEETINGS

- A. Contractor shall schedule with Engineer and District regular weekly meetings at mutually agreed time to discuss the following:
 - 1. Work completed the previous week.
 - 2. Work planned for the following 3 weeks.
 - 3. Long-term work planning issues.
 - 4. Coordination of Contractor and District activities.
 - 5. Other topics related to facilitating project progress.
- B. Hold "Additional Meetings" as progress of work dictates.
- C. Location of meetings shall be designated during preconstruction conference.
- D. Attendance:
 - 1. District or his representative.
 - 2. Engineer.
 - 3. Contractor.

4. Other contractors (if any).
5. Subcontractors as pertinent to agenda.
6. Safety representative (optional).
7. Representatives of governmental or other regulatory agencies.
8. Consultant(s) as pertinent to agenda.

E. Meeting minutes will be prepared by the Engineer or District.

1.05 CONTRACTOR WEEKLY SAFETY MEETINGS

- A. Contractor shall schedule and conduct weekly safety meetings for Contractor's staff to discuss site safety issues.
- B. Submit copies of agenda and attendance list to District.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01325
PROGRESS SCHEDULES AND REPORTS

PART 1 – GENERAL

1.02 SUMMARY

- A. Requirements and procedures for development and implementation of Project schedules and reports.
- B. Related Sections:
 - 1. Section 00700 – General Conditions
 - 2. Section 01330 – Submittal Procedures

1.03 SUBMITTALS

- A. Refer to Section 01330 – Submittal Procedures for general submittal requirements.
- B. Monthly: Updated Progress Schedule in the form of a Gantt Chart.
- C. Weekly: Updated 3 Week Look-Ahead Schedule.

1.04 SCHEDULE REQUIREMENTS

- A. Scheduling of construction is the responsibility of the Contractor.
- B. Updated Progress Schedules are used for the following:
 - 1. To assure adequate planning and execution of the Work.
 - 2. To assist the District in appraising the reasonableness of the proposed schedule and evaluating progress of the Work.
 - C. Monthly progress payments made in accordance with the General Conditions will not be processed until receipt of the revised Progress Schedule.
 - D. The Contractor's responsibilities shall include:
 - 1. Creation of the Progress Schedule in the form of a Gantt Chart and Weekly look ahead schedules.
 - 2. Execution of the plan described by the Progress Schedule.
 - 3. Participation in progress meetings.

1.05 GANTT CHART (TIME SCALE BAR CHART) REQUIREMENTS

A. Gantt Chart shall:

1. Show the order and interdependence of activities planned by the Contractor.
2. Be drafted to show a continuous flow from left to right with no arrows from right to left.
3. Provide a logical sequence of the Work to be accomplished.
4. All non-dummy activities shall be drafted on a horizontal plane.
5. Keep “dummy” activities to a minimum.
6. Represent each subnetwork with a two-line bar. One bar to show scheduled progress and one open bar for reporting progress.

B. Basic concept of a Progress Schedule shall be utilized to show the start of a given activity to be dependent on completion of all activities directly preceding the given activity.

C. Each activity description shall be sufficient to identify the work without reference to any other activity.

D. Identify those activities which are planned to be expedited by use of overtime, double shifts, or to be worked on Saturdays, Sundays, and holidays.

E. The Progress Schedule shall indicate as a minimum the items and listed in the Schedule of Values.

F. Detailed activities shown shall include:

1. Construction activities, including activities of subcontractors, assigned contractors, and suppliers.
2. Submittal and approval of samples of materials and Shop Drawings.
3. Procurement of materials and equipment.
4. Fabrication of special material and equipment.
5. Installation of major and/or critical items.
6. Testing.
7. Start-up.
8. Actions of District or Engineer affecting progress or completion date.

- G. The detail of information shall be such that duration times of activities will range from 1 to 30 days with not over 2 percent of the activities exceeding these limits.
- H. The selection and number of activities shall be subject to the Engineer's approval.
- I. Sheet size of diagrams shall be minimum 11 inches by 17 inches with latest revision date.

1.06 TIME EXTENSION

- A. See Section 00700 – General Conditions for requirements for time extensions.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 CONTRACTOR TO SCHEDULE WORK

- A. The Contractor shall keep the District informed sufficiently in advance of the times and places at which he intends to work in order that lines and grades may be furnished and the necessary measurements and payment may be made with the minimum of inconvenience and delay to the Engineer, District, and the Contractor.
- B. If the schedule of work be such as to handicap the setting of necessary engineering control, the Contractor shall suspend his operations at the particular place in sufficient time for the Engineer to complete his work during normal working hours. Any additional expense to the Contractor arising from the temporary suspension of work shall be considered as incidental to the construction and be included in various bid items of the Contract.
- C. Work shall be scheduled to allow for constraints by any public agency having jurisdiction.
- D. In the event of the Contractor's failure to prepare, submit, and update the schedules and reports, the District may withhold funds from one or more progress payments in an amount which the District determines is required to cover the cost of the District or the Engineer to prepare or update the schedules and reports.

3.02 SCHEDULE REVIEW AND APPROVAL

- A. If requested, the Contractor shall participate in a review meeting and evaluation of the proposed schedules and analysis by the District and Engineer.
- B. Any revisions necessary as a result of the review shall be resubmitted for approval of the District within 10 calendar days after receipt of the District's and Engineer's review comments.

- C. Approved schedule shall be used by the Contractor for planning, organizing, and directing the Work; and for reporting progress.

3.03 SCHEDULE CHANGES BY CONTRACTOR

- A. If the Contractor desires to make changes in his method of operating and scheduling, he shall notify the Engineer in writing stating the reasons for the change.

- 1. If the Engineer considers these changes to be of a major nature, he may require the Contractor to revise and submit for approval all or the affected portion of the Project Schedule show the effect on the entire Project.

- B. A change may be considered of a major nature if the time estimated to be required or actually used for an activity or the logic of sequence of activities is varied from the original plan to a degree that there is a reasonable doubt as to the effect on the contract completion date or dates.

- C. Changes which affect activities with adequate slack time shall be considered as minor changes, except that an accumulation of minor changes may be considered a major change when their cumulative effect can be demonstrated to affect the contract completion date.

3.04 SCHEDULE CHANGES BY DISTRICT

- A. When Change Orders are issued or when a Notice to Proceed with changes in the Work must be issued prior to settlement of price and/or time to avoid delay and additional expense, the Contractor will revise the duration times estimates of all activities affected by the modification on the next succeeding updating report.
- B. Revisions shall be submitted for concurrence of the District prior to inclusion in the network.

END OF SECTION

SECTION 01330
SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

- A. General procedures and requirements for submittals during the course of construction.
- B. Related Sections:
 - 1. Section 01200 – Price and Payment Procedures
 - 2. Section 01325 – Progress Schedules and Reports
 - 3. Section 01450 – Quality Control
 - 4. Section 01770 – Closeout Procedures
 - 5. Section 01780 – Record Drawings

1.02 SUBMITTAL PROCEDURES

- A. Inquiries: Direct to Engineer regarding procedure, purpose, or extent of submittal.
- B. Timeliness: Schedule and make submissions in accordance with requirements of individual specification sections and in such sequence as to cause no delay in Work or in work of other contractors.
- C. Complete, sign, and transmit with each submittal package one copy of the Submittal Transmittal Form.
- D. Submit to Engineer as required by individual specification sections. Engineer will transmit copies to District as appropriate.
- E. Resubmissions: Clearly identify each correction or change made.
- F. Incomplete Submissions
 - 1. Engineer will return the entire submittal for Contractor's revision/correction and resubmission.
 - 2. Submittals that do not clearly bear Contractor's specific written indication of Contractor review and approval of submittal or that are transmitted with an unsigned or uncertified submission form or as may otherwise be required will be returned to Contractor unreviewed.
- G. Nonspecified Submissions: Submissions not required under these Contract Documents and not shown on submissions will not be reviewed and will be returned to the Contractor.

- H. Engineer's Review: Engineer will act upon Contractor submittal and transmit response to Contractor not later than 14 days after receipt, unless otherwise specified. Resubmittals will be subject to the same review time.
- I. Schedule Delays
 - 1. No adjustment of contract times or price will be allowed due to Engineer's review of submittals, unless all of the following criteria are met:
 - a. Contractor has notified Engineer in writing that timely review of submittal in question is critical to progress of Work and has received Engineer's written acceptance to reflect such on current accepted submissions and progress schedule. Written agreement by the Engineer to reduce submittal review time will be made only for unusual and Contractor-justified reasons. Acceptance of a progress schedule containing submittal review times less than specified or less than agreed to in writing by Engineer will not constitute Engineer's acceptance of the reduced review times.
 - b. Engineer has failed to review and return first submission of a submittal within agreed time indicated on current accepted schedule of submissions or, if no time is indicated thereon, within 21 days after receipt.
 - c. Contractor demonstrates that delay in progress of Work is directly attributable to Engineer's failure to return submittal within time indicated and accepted by Engineer.
 - 2. No adjustment of contract times or price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmission of submittals, including multiple resubmissions.

1.03 SUBMITTAL PREPARATION

- A. Format: Whenever possible, schedule for and combine Shop Drawings and samples required for submission in each specification section into a single submittal package.
- B. Present in a clear and thorough manner and of sufficient detail to show kind, size, arrangement, and function of components, materials, and devices and compliance with Contract Documents. Identify details by reference to sheet and detail, and schedule or room numbers as shown on Drawings.
- C. Sheet Sizes: 8-1/2 inches by 11 inches or multiples thereof to a maximum of 22 inches by 34 inches.
- D. Piping Systems shall be drawn to scale.
- E. Product Data: Clearly mark each copy to identify pertinent products or models and show performance characteristics and capacities, dimensions and clearances required, wiring, or piping diagrams and controls, and external connections, anchorages, and supports required.
- F. Equipment and Component Titles: Identical to title shown on Drawings.

G. Manufacturer's standard schematic drawings and diagrams as follows:

1. Modify to delete information that is not applicable to work.
2. Supplement standard information to provide information specifically applicable to work.

H. Identification of Submittals:

1. Identify each submittal with the following numbering and tracking system:
 - a. Sequentially number each submittal.
 - b. Resubmission of a submittal will have original submittal number with sequential alphabetic suffix.
2. Format: Orderly, indexed with labeled tab dividers.
3. Show date of submission.
4. Show project title, District's contract identification, and contract number.
5. Show names of Contractor, subcontractor, or supplier and manufacturer as appropriate.
6. Identify, as applicable, Contract Document section and paragraph to which submittal applies.
7. Identify submittal type. Submit only one type in each submittal package.
8. Identify and indicate each deviation or variation from Contract Documents.

1.04 SUBMITTAL QUANTITY, DISPOSITION, AND DISTRIBUTION

A. Submittal Quantity and Format

1. Administrative, Shop Drawings and Product Data, Quality Control, and Project Closeout submittals: One electronic (pdf format) submittal.
2. Utilize a Submittal Transmittal form as cover sheet for submittal. Submittal Transmittal form is available as Microsoft Word document and will be provided to contractor upon request.
3. Samples: Two, unless otherwise specified in individual specification sections. Samples will not be returned.

B. Submittal Disposition Categories

1. Engineer will review submittal information and generate a Submittal Review Form listing review comments and indicate submittal status.
2. Submittal status categories are listed below.
 - a. No Exception Taken (for incorporation in Work)

- 1) Contractor may begin to implement activities to incorporate specific product(s) or Work covered by submittal.
 - 2) Ramifications to Schedule: Indicates that schedules provide for the orderly progression of the Work to completion within any specified milestones and the contract times, but such acceptance will neither impose on Engineer's responsibility for the sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefore.
 - 3) Acceptance will indicate that submittal conforms to intent of Contract Documents as to form and substance.
- b. Approved as Noted (for incorporation in work):
- 1) Contractor may begin to implement activities to incorporate product(s) or work covered by submittal, in accordance with Engineer's notations.
 - 2) Contractor to satisfy comments and requirements generated during submittal review but resubmittal is not required.
- c. Rejected:
- 1) Contractor shall make corrections or develop replacement and resubmit (in same manner and quantity as specified for original submission).
 - 2) Submittal is not satisfactory and Contractor may not incorporate specific product(s) or conduct Work covered by submittal.
- d. Revise and Resubmit:
- 1) Contractor shall resubmit entire submittal after making required revisions (in same manner and quantity as specified for original submission).
 - 2) Submittal is not satisfactory and Contractor may not incorporate specific product(s) or conduct Work covered by submittal.
- e. Submit Specified Items:
- 1) Contractor shall submit missing portions (in same manner and quantity as specified for original submission).
 - 2) Submittal is not satisfactory and Contractor may not incorporate specific product(s) or conduct Work covered by submittal, unless otherwise noted in the Engineer's review comments.

C. Submittal Distribution

1. Submittals will be distributed to the following:

- a. District.
- b. Resident Project Representative.
- c. Engineer.
- d. Contractor

1.05 SHOP DRAWINGS AND SAMPLES SUBMITTAL REQUIREMENTS

A. Identify and Indicate:

- 1. Pertinent drawing sheet(s) and detail number(s), products, units and assemblies, and system or equipment identification or tag numbers.
- 2. Critical field dimensions and relationships to other critical features of Work.
- 3. Samples: Source, location, date taken, and by whom.
- 4. Each deviation or variation from Contract Documents.
- 5. Where spare parts are to be provided under individual specification sections, indicate the lead time for delivery of all spare parts and a list of suppliers of the spare parts.

B. Design Data: When specified, provide project-specific information as required and as necessary to clearly show calculations, dimensions, logic and assumptions, and referenced standards and codes upon which design is based. C. Foreign Manufacturers:

- 1. When proposed, include the following additional information:
 - a. Names and addresses of at least two companies closest to Project that maintain technical service representatives.
 - b. List of local spare parts and accessories available for proposed equipment.

1.06 ADMINISTRATIVE SUBMITTAL REQUIREMENTS

A. Description:

- 1. Administrative submittals are not Shop Drawings or samples and do not reflect quality of product or method of construction.
- 2. May include, but is not limited to, those submittals identified below:
 - a. Applications for Payment.
 - b. Progress Reports and Quantity Charts: As may be required in Section 01325 – Progress Schedules and Reports.

- c. Progress Schedule(s): Meet the requirements of Section 01325 – Progress Schedules and Reports.
- d. Schedule of Values: Meet the requirements of Section 01200 – Price and Payment Procedures.
- e. Submittals Required by Laws, Regulations, and Governing Agencies:
 - 1) Submit promptly notifications, reports, certifications, payrolls, and otherwise as may be required directly to the applicable federal, state, or local governing agency or their representative.
 - 2) Transmit to Engineer for District's records one copy of correspondence and transmittals (to include enclosures and attachments) between Contractor and governing agency.

1.07 QUALITY CONTROL SUBMITTAL REQUIREMENTS

- A. Quality control submittals may include, but are not limited to, those submittals identified below:
 - 1. Certificates as described in Section 01450 – Quality Control.
 - 2. Statements of Qualification as described in Section 01450 – Quality Control.
 - 3. Field Samples: Provide as required by individual specifications and as may be required by Engineer during progress of Work.
 - 4. Written Test Reports of Each Test and Inspection as described in Section 01450 – Quality Control.

1.08 CONTRACT CLOSEOUT SUBMITTAL REQUIREMENTS

- A. Closeout documents: As required in Section 01770 – Closeout Procedures.
- B. Record Drawings: As required in Section 01780 – Record Drawings.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

6.	AGC	Associated General Contractors of America
7.	AGMA	American Gear Manufacturer Association
8.	AIA	American Institute of Architects
9.	AISC	American Institute of Steel Construction
10.	AISI	American Iron and Steel Institute
11.	AITC	American Institute of Timber Construction
12.	AMCA	Air Moving and Conditioning Associations
13.	ANSI	American National Standards Institute, Inc.
14.	APA	American Plywood Association
15.	API	American Petroleum Institute
16.	APWA	American Public Works Association
17.	AREA	American Railway Engineering Association
18.	ARI	Air Conditioning and Refrigeration Institute
19.	ASAE	American Society of Agriculture Engineers
20.	ASCE	American Society of Civil Engineers
21.	ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
22.	ASME	American Society of Mechanical Engineers
23.	ASTM	American Society for Testing and Materials
24.	AWPA	American Wood Preservers Association
25.	AWS	American Welding Society
26.	AWWA	American Water Works Association
27.	CBMA	Certified Ballast Manufacturers Association
28.	CCR	California Code of Regulations
29.	CGA	Compressed Gas Association

30.	CRSI	Concrete Reinforcing Steel Institute
31.	CSA	Canadian Standards Association
32.	CSI	Construction Specifications Institute
33.	CIPRA	Cast Iron Pipe Research Institute
34.	CISPI	Cast Iron Soil Pipe Institute
35.	DFP	Douglas Fir Plywood Association
36.	DIPRA	Ductile Iron Pipe Research Association
37.	EJCDC	Engineers Joint Contract Documents' Committee
38.	EPA	Environmental Protection Agency
39.	FEMA	Federal Emergency Management Agency
40.	FHWA	Federal Highway Administration
41.	FM	Factory Mutual
42.	FS	Federal Specifications
43.	HI	Hydraulic Institute
44.	IBC	International Building Code
45.	ICBO	International Conference of Building Officials
46.	ICEA	Insulated Cable Engineers Association
47.	IEEE	Institute of Electrical and Electronics Engineers, Inc.
48.	IPCEA	Insulated Power Cable Engineers Association
49.	ISA	Instrument Society of America
50.	JIC	Joint Industry Conference of Hydraulic Manufacturers
51.	MS	Military Specification
52.	MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
53.	NACE	National Association of Corrosion Engineers

54.	NAMM	National Association of Metal Manufacturers
55.	NBFU	National Bureau of Fire Underwriters
56.	NEBB	National Environmental Balancing Bureau
57.	NEC	National Electrical Code
58.	NEMA	National Electrical Manufacturers Association
59.	NESC	National Electric Safety Code
60.	NFPA	National Fire Protection Association
61.	NPC	National Plumbing Code
62.	NLMA	National Lumber Manufacturers Associations
63.	NSF	National Sanitary Foundation Testing Laboratory
64.	OECI	Overhead Electric Crane Institute
65.	OSHA	Occupational Safety and Health Act
66.	PCA	Portland Cement Association
67.	PPI	Plastic Pipe Institute
68.	PS	Product Standards Section – U.S. Department of Commerce
69.	SAE	Society of Automotive Engineers
70.	SAMA	Scientific Apparatus Manufacturers Association
71.	SMACNA	Sheet Metal and Air Conditioning Contractors National Association
72.	SSPC	Steel Structures Painting Council
73.	UBC	Uniform Building Code
74.	UFC	Uniform Fire Code
75.	UL	Underwriter’s Laboratory
76.	UMC	Uniform Mechanical Code
77.	UPC	Uniform Plumbing Code

- | | | |
|-----|-------|-------------------------------------|
| 78. | WAC | Washington Administrative Code |
| 79. | WCLIB | West Coast Lumber Inspection Bureau |
| 80. | WWPA | Western Wood Products Association |

1.03 ABBREVIATION LIST

A. Whenever used in these specifications, the following abbreviations shall mean the words and terms listed below.

B. Duplicate definitions shall be interpreted in context of use. Note that some abbreviations are not capitalized by convention.

- | | | |
|-----|----------|---|
| 1. | @ | At |
| 2. | AB | Anchor Bolt |
| 3. | AL | Aluminum |
| 4. | ANCH | Anchor |
| 5. | APPROX | Approximate |
| 6. | ARV | Air Release Valve/Combination Valve |
| 7. | BF | Bottom Face, Blind Flange |
| 8. | BL | Base Line |
| 9. | BM | Beam |
| 10. | BLDG | Building |
| 11. | BLT | Bolt |
| 12. | BOT | Bottom |
| 13. | BTU | British Thermal Unit |
| 14. | BTUH | British Thermal Units Per Hour |
| 15. | C | Centigrade/Celsius |
| 16. | C TO C | Center to Center |
| 17. | Caltrans | California Department of Transportation |
| 18. | CB | Catch Basin |

19.	CCP	Concrete Cylinder Pipe (Pretensioned)
20.	CF	Cubic Feet
21.	CFM	Cubic Feet Per Minute
22.	CFS	Cubic Feet Per Second
23.	CIP	Cast Iron Pipe, Cast-In-Place
24.	CIPP	Cast-In-Place Pipe
25.	CISP	Cast Iron Soil Pipe
26.	CL & C	Center Line
27.	CLR	Clearance
28.	CPM	Critical Path Method
29.	CO	Cleanout
30.	COL	Column
31.	CONC	Concrete
32.	CONN	Connection, Connecting
33.	CONT	Continue, Continuous, Contractor
34.	CSO	Combined Sewer Overflow
35.	CTR	Center
36.	DB, DBA	Decibel
37.	DI	Ductile Iron
38.	DIP	Ductile Iron Pipe
39.	DIA	Diameter
40.	DIF	Ductile Iron Flanged
41.	DIMJ	Ductile Iron Mechanical Joint
42.	DN	Down

43.	DR	Drain
44.	DTL	Detail
45.	DWG	Drawing
46.	DWL	Dowel
47.	EA	Each
48.	EEO	Equal Employment Opportunity
49.	EL, ELEV	Elevation
50.	EQL	Equal
51.	EW	Each Way
52.	EXHW	Extreme High Water
53.	EXP ANC	Expansion Anchor
54.	EXIST, EX	Existing
55.	F	Fahrenheit
56.	FAB	Fabricate
57.	FB	Flat Bar
58.	FC	Flexible Coupling
59.	FED SPEC	Federal Specification
60.	FLG	Flange
61.	FPM	Feet Per Minute
62.	FT, FT ² , FT ³	Foot, Square Feet, Cubic Feet
63.	FTG	Footing
64.	GA	Gauge
65.	GAL	Gallon
66.	GALV	Galvanize (Hot Dip)

67.	GPD	Gallons Per Day
68.	GPH	Gallons Per Hour
69.	GPM	Gallons Per Minute
70.	HGT	Height
71.	HOA	Hand-Off-Auto
72.	HORIZ	Horizontal
73.	HP	Horsepower
74.	HR	Hour
75.	HT	Height
76.	HWL	High Water Level
77.	HZ	Hertz
78.	ID	Inside Diameter
79.	I.E.	Invert Elevation
80.	IN, IN ² , IN ³	Inch, Square Inches, Cubic Inches
81.	JT	Joint
82.	KV	Kilovolt
83.	KVA	Kilovolt Ampere
84.	KVAR	Reactive Kilovolt Amperes
85.	KW	Kilowatts
86.	KWH	Kilowatt Hours
87.	L	Length
88.	LB, LBS	Pound, Pounds
89.	LF	Linear Feet
90.	LONG	Longitudinal

91.	LS	Lump Sum
92.	LWL	Low Water Level
93.	M	Thousand
94.	MA	Milliamperes
95.	MATL	Material
96.	MAX	Maximum
97.	MB	Machine Bolt
98.	MBTUH	One Thousand British Thermal Units Per Hour
99.	MFR	Manufacturer
100.	MGD	Million Gallons Per Day
101.	MGL	Milligrams Per Liter, also mg/l
102.	MH	Manhole
103.	MHHW	Mean Higher High Water
104.	MIN	Minimum, Minute
105.	MJ	Mechanical Joint
106.	MLLW	Mean Lower Low Water
107.	MSL	Mean Sea Level
108.	MTL	Metal
109.	MV	Millivolts
110.	MVA	Megavolt Amperes
111.	NGVD	National Geodetic Vertical Datum
112.	NO.	Number
113.	NPSH	Net Positive Suction Head
114.	NPT	National Pipe Thread

115.	NRS	Non-Rising Stem
116.	NTS	Not To Scale
117.	OC	On Center
118.	OD	Outside Diameter
119.	OPNG	Opening
120.	OPP	Opposite
121.	OZ	Ounce
122.	PC	Precast Concrete
123.	PCCP	Prestressed Concrete Cylinder Pipe
124.	PE	Plain End
125.	pH	Hydrogen Ion Concentration
126.	PH	Phase
127.	PL	Plate
128.	PRV	Pressure Reducing/Regulating Valve
129.	PSF	Pounds per Square Foot
130.	PSI	Pounds per Square Inch
131.	PSIG	Pounds per Square Inch Gauge
132.	PT	Pint or Point
133.	PVC	Polyvinyl Chloride
134.	RCP	Reinforced-Concrete Pipe
135.	RECM	Recommended
136.	REINF	Reinforce
137.	REQ'D	Required
138.	RMS	Root Mean Square

139.	RPM	Revolutions per Minute
140.	RST	Reinforcing Steel
141.	RWQCB	Reginal Water Quality Control Board
142.	SCFM	Standard Cubic Feet per Minute
143.	SECT	Section
144.	SHT	Sheet
145.	SPEC	Specification
146.	SQ	Square
147.	SQFT	Square Foot
148.	SQ IN	Square Inch
149.	SQMI	Square Mile
150.	SS, SST	Stainless Steel
151.	STD	Standard
152.	STL	Steel
153.	T & B	Top and Bottom
154.	TB	Thrust Block
155.	TEFC	Totally Enclosed Fan Cooled
156.	TYP	Typical
157.	V	Volt
158.	VERT	Vertical
159.	VFD	Variable Frequency Drive
160.	W/	With
161.	W/O	Without
162.	WOG	Water or Gas
163.	WS	Water Surface

164. WWTP Wastewater Treatment Plant
PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01450
QUALITY CONTROL

PART 1 – GENERAL

1.01 SUMMARY

- A. The requirements of this Section are primarily related to performance of the Work beyond furnishing of manufactured products.

1.02 DEFINITIONS

- A. The term “Quality Control” includes inspection, sampling and testing, and associated requirements.

1.03 INSPECTION AT PLACE OF MANUFACTURE

- A. Inspection at Plant: Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the Engineer at the place of manufacture.
- B. Inspection Not a Waiver: The presence of the Engineer at the place of manufacture, however, shall not relieve the Contractor of the responsibility for furnishing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the Contractor and said duty shall not be avoided by any act or omission on the part of the Engineer.

1.04 SAMPLING AND TESTING

- A. Sampling and Testing Methods: Unless otherwise indicated, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered; however, the District reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the Engineer will insure the District that the quality of the workmanship is in full accord with the Contract Documents.
- B. Testing Waiver: Any waiver by the District of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any requirements of the Contract Documents.
- C. Faulty Work Correction: Notwithstanding the existence of such waiver, the Engineer reserves the right to make independent investigations and tests, and failure of any portion of the Work to meet any of the requirements of the Contract Documents shall be reasonable cause for the Engineer to require the removal or correction and reconstruction of any such Work, in accordance with the Standard General Provisions.

1.05 DOCUMENTATION

- A. Written Test Reports of Each Test and Inspection

1. As a minimum, include the following:
 - a. Date of test and date issued project title and number, testing laboratory name, address, telephone number, and name and signature of laboratory inspector.
 - b. Date and time of sampling or inspection and record of temperature and weather conditions.
 - c. Identification of product and specification section, location of sample, test, or inspection in the Project, type of inspection or test with referenced standard code, certified results of test.
 - d. Compliance with Contract Documents and identifying corrective action necessary to bring materials and equipment into compliance.
 - e. Provide an interpretation of test results, when requested by Engineer.
- B. Certificates
 1. Certificates of Successful Testing or Inspection. Submit when testing or inspection is required by laws and regulations, manufacturer, or governing agency or specified in the individual specification sections.
- C. Statements of Qualification: Evidence of qualification, certification, or registration. As required in these Contract Documents to verify qualifications of professional land surveyors, engineers, materials testing laboratories, specialty subcontractors, trades, consultants, installers, and other professionals.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Inspection: The Contractor shall inspect materials or equipment upon arrival on the job site and immediately prior to installation and reject damaged and defective items.
- B. Measurements: The Contractor shall verify measurements and dimensions of the Work, as an integral step of ordering materials and equipment and of starting each installation.
- C. Manufacturer's Instructions: Where installations include manufactured products, the Contractor shall comply with the Manufacturer's applicable instructions and recommendations for storage and installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the Contract Documents.

END OF SECTION

SECTION 01458
TESTING LABORATORY SERVICES

PART 1 – GENERAL

1.01 INDEPENDENT TESTING

- A. District will pay for services of an independent testing laboratory for:
 - 1. Water Quality Testing (if necessary).
- B. Contractor shall pay for the services of an independent testing laboratory for:
 - 1. Soils: Gradation, moisture density standards determination, and in-place density tests.
 - 2. Flexible Pavement: Mix design and components in accordance with Section 02740 – Flexible Pavement.
 - 3. All other tests, specified in Divisions 2, shall be the responsibility of the Contractor.

1.02 RESPONSIBILITIES OF CONTRACTOR

- A. Cooperate with laboratory personnel and provide access to Work.
- B. Provide preliminary representative samples of materials to be tested to laboratory in required quantities.
- C. Furnish copies of test reports.
- D. Furnish casual labor and facilities:
 - 1. To provide access to Work to be tested.
 - 2. To assist laboratory personnel to obtain and handle samples at the site.
 - 3. To facilitate inspections and tests.
 - 4. For laboratory's exclusive use for storage and curing of test samples.
- E. Notify District and laboratory sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests, in no case shall notification be less than 48 hours before the required test.
- F. Contractor shall be responsible for Contractor's quality control tests.
- G. The District reserves the right to require the Contractor to pay for the cost of any additional tests that are required due to failure (such as water quality tests), poor workmanship, testing delays due to incomplete work, or other non-District/Engineer related circumstances.
- H. Perform or provide tests as specified by Divisions 02 except those tests specified herein.

- I. Provide Engineer with four copies of all test results within 7 days of receipt from the testing laboratory.

1.03 RESPONSIBILITIES OF DISTRICT

- A. District will provide the Contractor with a copy of all test results within 7 days of receipt from the testing laboratory for District paid testing.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01510
TEMPORARY UTILITIES

PART 1 – GENERAL

1.01 SUMMARY

- A. Furnish, install, and maintain temporary utilities necessary for construction.
- B. Remove temporary utilities upon completion of Work.
- C. Related Sections
 - 1. Section 01520 – Temporary Facilities

1.02 TEMPORARY COMMUNICATION AND DATA SERVICE

- A. The Contractor shall furnish communication and data service as necessary for their use at the Project site.
- B. The cost of installation and monthly bills for the Contractor's communication and data service shall be borne by the Contractor.

1.03 TEMPORARY WATER

- A. Water for testing, flushing, or cleanup purposes shall be provided by the Owner.
 - 1. Contractor shall pay a refundable fire hydrant meter deposit and secure hydrant meter from Owner.
 - 2. Contractor shall utilize meter when taking water from system hydrants. There will be no charge to the Contractor for the volume of water used.
- B. Operation of system valves and appurtenances to supply system water must be coordinated with Owner.
- C. The Contractor shall provide all other pipe fittings and connections necessary to access Owner's water.
- D. The Contractor shall provide backflow preventer devices, approved by the Owner, to prevent a cross connection between the water supply and wastewater conveying systems, where necessary.

1.04 TEMPORARY ELECTRIC POWER

- A. Unless otherwise specified, the Contractor shall provide all necessary power and special connections to power lines.

- B. Temporary electric power installation shall meet the construction safety requirements of OSHA, state, and other governing agencies.

1.05 TEMPORARY HEATING

- A. The Contractor shall provide temporary heating, covering, and enclosures as necessary to protect all work and material against damage by dampness and cold, and to facilitate completion of the work. The Contractor shall supply all the fuel, equipment, and materials required for temporary heating.

1.06 REMOVAL OF TEMPORARY UTILITIES

- A. At such time or times any temporary utilities are no longer required for the work; the Contractor shall notify the Owner of his intent and schedule for removal of the temporary utilities. B. Contractor shall obtain the Owner's approval before removing temporary utilities.

C. Contractor shall return hydrant meter to Owner.

D. As approved, the Contractor shall remove the temporary utilities from the site as his property and leave the site in such condition as directed by the Owner, and/or as shown on the Drawings.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01520

TEMPORARY FACILITIES

PART 1 – GENERAL

1.01 SUMMARY

- A. This section includes requirements for installation and removal of temporary facilities.
- B. Related Sections
 - 1. Section 01510 – Temporary Utilities

1.02 CONTRACTOR'S WORK AREA

- A. The Contractor shall confine work within the limits of temporary and permanent easements designated on the Drawings and rights-of-way where permission for encroachment has been granted.

1.03 SECURITY

- A. Contractor shall take all necessary steps to secure the construction site, including, but not necessarily limited to, fencing, lighting, and night watchmen.

1.04 CONTRACTOR BUILDINGS AND STORAGE AREAS

- A. Contractor shall furnish, at his own expense, all offices, sheds, storage buildings, shelters, and protection for workers that he may require for his own use or may deem fit. All structures and their locations shall be approved by the Engineer prior to construction or placement on site.
- B. The Contractor shall provide protection of equipment and materials as recommended by manufacturers of such equipment and materials. The Contractor may make arrangements with the Owner to store equipment and material around the job sites solely at the discretion of the Owner.
- C. Materials such as pipe and reinforcing and structural steel shall be stored on pallets or racks, off the ground, and stored in a manner to allow ready access for inspection and inventory. Temporary gravel surfacing of the storage yards shall meet with the approval of the Engineer.
- D. Combustible materials (paints, solvents, fuels, etc.) shall be stored in a well-ventilated building, removed from other buildings.
 - 1. Store petroleum products, industrial chemicals, and similar toxic or volatile materials in durable containers approved by Engineer and located in areas where accidental spillage will be contained.

2. Store substantial quantities of materials in an area surrounded by containment dikes of sufficient capacity to contain an aggregate capacity of tanks.

1.05 SANITARY FACILITIES

- A. The Contractor shall provide adequate toilet facilities and washing facilities for all workers and Owner's Representatives employed on the site. The Contractor shall maintain the same in a sanitary condition at all times and shall then remove the facilities and disinfect the premises. All portions of the work shall be maintained at all times in a sanitary condition.
- B. When sewer service is proposed to be disrupted or temporarily disabled to residences, Contractor to provide portable toilet facilities for residents to utilize.
 1. Toilet facilities shall be ADA compliant.
- C. The Contractor shall establish a regular collection of all sanitary and organic wastes based on expected occupancy and use.
- D. Contractor shall dispose of all wastes in accordance with state laws and regulations.

1.06 CONSTRUCTION CLEANING AND WASTE DISPOSAL

- A. Keep the site and other areas used in a neat and clean condition, free from any accumulation of rubbish.
- B. Clean up the debris resulting from work at least once a day or more often if it interferes with the work of others or presents a fire hazard.
- C. Dispose of rubbish and waste materials and establish regular intervals of collection and disposal.
- D. Disposal of all rubbish and surplus materials shall be off the site of construction, at the Contractor's expense, all in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws.
 1. Burning of debris is not permitted.
- E. The Contractor shall notify the Owner and Engineer of the dump site utilized. Refuse shall only be disposed of in approved landfill sites.
- F. Dispose of offsite, in a lawful manner conforming to applicable local, state and federal laws, wastes, effluents, trash, garbage, oil, grease, chemicals, cement, bitumen, etc., petroleum, and chemical products or wastes containing such products.
 1. Furnish Owner with documentation showing compliance with this requirement.
 2. The Contractor shall be responsible for obtaining a suitable site for discharge of any fluid wastes (such as oil, gasoline, sewage, dechlorination water) or any other wastes which are prohibited by local ordinances.

- a. Disposal into storm or sanitary sewers, streams, or waterways will not be permitted.
- b. Any discharge site or method of disposal must be approved by the Engineer.

1.07 REMOVAL OF TEMPORARY FACILITIES

A. At such time or times any temporary facilities are no longer required for the work; the Contractor shall notify the Owner of his intent and schedule for removal of the temporary facilities. B.

Contractor shall obtain the Owner's approval before removing temporary facilities.

C. As approved, the Contractor shall remove the temporary facilities from the site as his property and leave the site in such condition as directed by the Owner, and/or as shown on the Drawings.

D. When Work is completed, remove storage and other Contractor buildings and facilities, and restore sites to a neat and presentable condition appropriate to surrounding landscape, unless otherwise specified.

E. Remove debris resulting from Contractor's operation.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01550

TRAFFIC CONTROL AND PUBLIC SAFETY

PART 1 - GENERAL

1.1 SCOPE

- A. The Work included under this section shall consist of providing for the public's convenience, safety, and maintaining traffic control, including flaggers.

1.2 RELATED SECTIONS A.

None.

1.3 REFERENCE SPECIFICATIONS

- A. California Manual on Uniform Traffic Control Devices, latest edition.
- B. Federal Highway Administration Manual on Uniform Traffic Control Devices, latest edition.

1.4 SUBMITTALS

- A. Traffic Control Plan
 - 1. Traffic control plan shall conform to:
 - a. Caltrans and Placer County Encroachment permits, where applicable.
 - b. Staging area entrances/exits.
 - c. Commercial area required parameters set forth in the plans and this section.

1.5 TRAFFIC AND ACCESS

- A. The Contractor's operations shall cause no unnecessary inconvenience to the public. Delays shall be kept to 10 minutes or less. The access rights of the public shall be considered at all times. Unless otherwise authorized by proper local authority, traffic shall be permitted to pass through the work site on approved or specified detours.
- B. Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from District and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- C. Safe and adequate access shall be provided and maintained to fire hydrants and all utility control locations. Access to these facilities shall be continuous and unobstructed unless otherwise approved by the Engineer.
- D. Residents along the road or street shall be provided passage. Convenient access to driveways, houses and buildings along the road or street shall be maintained. Temporary crossings shall be provided and maintained in good condition.

- E. The blocking of industrial, commercial or institutional driveways shall not be allowed. Access shall be provided to permit the movement of vehicles to and from the grounds of such establishments. Contractor shall provide vehicular access to all other types of driveways at all times except during actual construction.

1.6 STORAGE OF EQUIPMENT AND MATERIALS IN PUBLIC STREETS

- A. Construction materials may not be stored in streets, roads, or highways after unloading except where such street or road is provided with a detour. All such materials or equipment not installed or used in the construction shall be stored elsewhere by the Contractor at Contractor's expense unless Contractor is authorized additional storage space.
- B. Excavated material, except that which is to be used as backfill in the adjacent trench, may not be stored in public streets, roads, or highways unless otherwise permitted. After placing backfill, all excess material shall be removed immediately from the site.

1.7 STREET CLOSURES, DETOURS, BARRICADES

- A. The Contractor shall comply with all applicable State, County and District requirements for closure of streets. The Contractor shall provide barriers, guards, lights, signs, temporary bridges, flaggers and other persons, advise the public of detours and construction hazards and notify local newspapers of detours. The Contractor shall also be responsible for compliance with additional public safety requirements which may arise during construction. Contractor shall furnish and install, and upon completion of work, promptly remove all signs and warning devices.
- B. Not less than 7 days prior to closing, or partially closing, or reopening any street, the Contractor shall notify, in writing, the local Fire Protection District, Sheriff or Police Department, the local School District, Engineer, Owner and the California Highway Patrol and other City, County and State offices as may be appropriate. All road closures shall be approved in writing by Owner. All roads shall be opened at the end of each workday.
- C. Not more than one cross street shall be temporarily closed at any time unless prior written authorization is granted by Engineer.

1.8 SIGNS, LIGHTS AND DEVICES

- A. All signs, lights, barricades, and use of flaggers shall conform to the requirements set forth in the "California Manual on Uniform Traffic Control Devices," by the California Department of Transportation, and the "Manual on Uniform Traffic Control Devices" by the Federal Highway Administration.

1.9 ADVISORIES TO THE PUBLIC

- A. Contractor shall provide adequate signage on affected streets to notify the public of the anticipated start and completion dates for work on each street within the project area. Variable message boards or temporary signs complying with MUTCD requirements shall be used. Contractor shall also provide separate notification of specific dates and time periods when each street, driveway or section of street will be closed to all traffic.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Contractor shall comply with all traffic control plans and permits applicable to the Project.
- B. All traffic control plans and permits shall be posted at the job site at all times.

3.2 INSTALLATION

- A. All traffic control measures shall be installed prior to construction. All traffic control devices are to be removed and streets shall be opened at the end of each construction day.

END OF SECTION

SECTION 01570
TEMPORARY CONTROLS

PART 1 – GENERAL

1.01 SUMMARY

- A. Information for appropriate controls and safety measures for environment, erosion, water resources, and cultural resources.
- B. Related Sections
 - 1. Section 00800 – Special Provisions

1.02 ENVIRONMENTAL POLLUTION

- A. Maintain all work areas within and outside the project boundaries free from environmental pollution, which would be in violation of any federal, state, or local regulations.
- B. Give special attention to the effect of Contractor's operations upon surroundings. Take special care to maintain natural surroundings undamaged.

1.03 WATER RESOURCES

- A. Perform Work not to create conditions injurious to fish or to their habitat, or which would make water unsuitable for private, municipal, or industrial use.
- B. Take special measures to prevent chemicals, fuels, oils, grease, bituminous materials, waste washings, herbicides, insecticides, lime, wet concrete, cement, silt, or organic or other deleterious material from entering waterways.
- C. If waste material is dumped in unauthorized areas, remove material and restore area to condition of adjacent, undisturbed area.
 - 1. If necessary, excavate contaminated ground and disposed of as directed by Engineer and replace with suitable compacted fill material with surface restored to original condition.
 - 2. Dispose of waters used to wash down equipment in a manner to prevent their entry into a waterway.

1.04 EROSION CONTROL

- A. Contractor shall provide temporary erosion control work as required by local agencies and project permits during the life of the Contract. This work is intended to provide prevention, control, and abatement of water pollution/erosion within the limits of the project, and to minimize damage to the work, adjacent property, streams, and other bodies of water.

1. Temporary erosion control accommodations shall conform with the *Implementing Permanent Storm Water Best Management Practices in the Lake Tahoe Basin*, latest edition, as adopted by the Lahontan Regional Water Quality Control Board.
- B. Contractor shall maintain the erosion control measures and facilities in proper condition such that they will individually and collectively perform the functions for which they were designed. To ensure the effectiveness and proper maintenance of the measures and facilities, the Contractor shall make periodic inspections at sufficiently frequent intervals to detect any impairment of the structural stability, adequate capacity, or requisites of the herein approved measures and facilities that might impair their effectiveness. The Contractor shall take immediate steps to correct any deficiencies found to exist.
- C. Temporary erosion control will be required for all finished slopes and surfaces within 48 hours of the stoppage of construction activities and/or 24 hours prior to a precipitation event. If the Owner determines that water pollution and/or erosion could occur due to seasonal limitations, the nature of the material, or the Contractor's progress, temporary water pollution/erosion control measures shall be taken immediately.
- D. Clearing and grubbing operations shall be so scheduled and performed that grading operations and erosion control features can follow immediately. If the project conditions do not permit this scheduling, temporary water pollution/erosion control measures will be required between successive construction stages.
- E. Repair and reestablish grades to the specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction.
- F. Stabilize all slopes, channels, ditches or any disturbed area as soon as possible after the final grade or final earthmoving has been completed.
 1. Maintain any erosion and sedimentation control facility required or necessary to protect areas from erosion during the stabilization period.
 2. Provide Visqueen sheeting and/or erosion control matting, properly anchored, to control erosion of cut or fill slopes and related construction.
- G. Upon completion of the project, stabilize all areas that were disturbed by the project to prevent accelerated erosion. The Contractor shall coordinate temporary water pollution/erosion control work with permanent drainage and erosion control work as required by the *Implementing Permanent Storm Water Best Management Practices in the Lake Tahoe Basin* or SWPPP to ensure that effective and continuous water pollution/erosion control is maintained during the construction of the Project.
 1. The Owner may require the Contractor's operations to be scheduled so that permanent erosion control features will be installed concurrently with or immediately following grading operations.

- H. Compliance with the requirements of this section shall not relieve the Contractor from his responsibility to comply with other provisions of the Contract.

1.05 CONSTRUCTION NOISE CONTROL

- A. Conduct all work as necessary so that no noise emanating from the process or any related tool or equipment will exceed legal noise levels.
- B. Use appropriate construction methods and equipment. Furnish and install acoustical barriers as necessary.
- C. Equip all internal combustion engines in vehicles and construction equipment with effective mufflers.

1.06 OIL SPILL PREVENTION AND CONTROL

- A. Prevent, contain, and clean up the spilling of oil, fuel, and other petroleum products used in Contractor's operations. A spill kit shall be provided on site.
- B. Discharge of oil from equipment or facilities into State waters or onto adjacent land is not permitted under State water quality regulations.
- C. At a minimum, take the following measures regarding oil spill prevention, containment, and cleanup:
 - 1. All land-based oil and products storage tanks shall be diked or located so as to prevent spills from escaping to the water.
 - 2. Diking and subsoils shall be lined with impervious material to prevent oil from seeping through the ground and dikes.
- D. Emergency Spill Response Notification:
 - 1. Under state law, the California Governor's Office of Emergency Services (OES) must be notified when any amount of regulated waste or hazardous material that poses an imminent threat to life, health, or the environment is released to the air, land, or water, or whenever oil is spilled on land or to waters of the state. The spiller is always responsible for reporting a spill. Failure to report a spill in a timely manner may result in enforcement actions. If you are not responsible for a spill, making the initial notification does not make you liable. However, please consult with OES's response team before attempting any type of response or cleanup. Also notify the local Fire Department (9-1-1), the Owner, and Engineer.
 - 2. If oil or hazardous materials are spilled to state waters, the spiller must notify both federal and state spill response agencies. The federal agency is the National Response Center at 1800-424-8802. For state notification, call the OES Spill Reporting Hotline at (800) 852-7550 or (916) 845-8911. A OES spill responder will normally call reporting party back to

gather more information. The agency will then determine its response actions. Also notify Owner and Engineer.

1.07 AIR POLLUTION CONTROL

- A. Do not discharge smoke, dust, or other contaminants into the atmosphere that violate the regulations of any legally constituted authority.
- B. Furnish all labor, equipment, and means required wherever and as often as necessary to prevent Contractor's operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. Required dust control measures may include hourly passes with a water truck or fixed sprinkling systems.
- C. Comply with specific requirements of air quality control laws.
- D. Perform corrective measures for damage resulting from dust originating from the work.
- E. Continue dust abatement measures until relieved of further responsibility by the Owner.

1.08 ARCHAEOLOGICAL OR CULTURAL RESOURCES

- A. Work is subject to the provisions of laws and regulations pertaining to the preservation of archaeological and cultural resources.
- B. Refer to Section 00800 – Special Provisions.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01590

PROTECTION OF EXISTING PROPERTY AND FACILITIES

PART 1 – GENERAL

1.01 SUMMARY

- A. Protect and maintain all underground or aboveground utilities and structures affected by the Work; all lawns, shrubs, trees, fences, rockeries, etc.; and parking strips or private property crossed by or adjacent to the site.
- B. Repair and restore damage to the satisfaction of Owner.
- C. Related Sections
 - 1. Section 01570 – Temporary Controls

1.02 PROTECTION OF PROPERTY AND EXISTING FACILITIES

- A. Provide protections necessary to prevent damage to private, County, State, and Federal property and facilities.
- B. Provide protections necessary to prevent damage to structures, foundations, hardscape, streets, walls, etc. resulting from addition or removal of water, vibration or shaking from explosives or compaction effort, foundation undermining, or any other activities which may cause damage.
- C. Protect and maintain all underground or aboveground structures affected by the Work and all lawns, shrubs, trees, fences, rockeries, etc., and parking strips or private property crossed by or adjacent to the site. Repair and restore damage to the satisfaction of Owner.
- D. Repair or replace or arrange for the repair or replacement of all such damage to roads, highways, ditches, bulkheads, walls, bridges, culverts, utilities, barricades, lights, or other property, caused by Contractor, whether such damage be at the site or caused by transporting or hauling to or from the site to the satisfaction of the Owner. Any material damaged by the Contractor's operations shall be replaced with new material unless otherwise approved by Owner.

1.03 PROTECTION OF EXISTING UTILITIES

- A. Make all arrangements necessary for the protection of utilities and services where Contractor's operations could cause damage or inconvenience to railway, telephone, television, power, oil, gas, water, sewer, irrigation systems, or other utility or service.
- B. Locate all utilities that may interfere with or be damaged by the Work.
- C. Relocation of existing utilities shown on the Plans shall comply with the standards and requirements of the utility Owner.

- D. Neither Owner nor Engineer shall be responsible to Contractor for damages because of the Contractor's failure to protect utilities encountered in the Work.
- E. Replace existing utilities or structures removed or damaged by Contractor during construction, unless otherwise provided for in these Contract Documents.

1.04 NOTICE TO UNDERGROUND UTILITIES LOCATE SERVICE

- A. Contractor shall call 811 for underground utility locate service before beginning Work.

1.05 PROTECTION OF TREES AND VEGETATION

- A. Protect existing trees and other vegetation indicated to remain in place against cutting, breaking or skinning of roots, skinning and bruising of bark, or smothering of trees by stockpiling materials within dripline. Provide necessary temporary guards to protect trees and vegetation to remain in place.
- B. Lawn hedges, shrubs, trees, etc., encountered in the line of work shall be carefully removed, kept moist and returned to their former location, and kept moist until well established, unless the plans indicate such items to be removed permanently, or indicated on the plans, no trees, plants or other ornamental vegetation shall be removed without the express written permission of the Engineer.
- C. Make every effort to minimize damage and cutting major tree roots during excavation operations. Provide protection for larger tree roots (greater than 2-inches in diameter) exposed or cut during excavation operations.

1.06 PROTECTION OF SURVEY MONUMENTS

- A. Preserve all existing Federal, State, County and private survey monuments, unless unavoidable due to requirements of Work. When it is unavoidable to disturb these monuments, notify Engineer at least two weeks in advance of the proposed Work in order that Engineer will have ample opportunity to reference these monuments for later replacement by Contractor.
- B. Replaced or reset monuments shall be of acceptable type and quality, placed in a manner consistent with recognized engineering and surveying practices.

1.07 REPAIR OF DAMAGED WORK OR PROPERTY

- A. Repair or replace or arrange for the repair or replacement of all such damage to roads, highways, ditches, bulkheads, walls, bridges, culverts, utilities, barricades, lights, or other property, caused by Contractor, whether such damage be at the site or caused by transporting or hauling to or from the site to the satisfaction of the Owner.
- B. Any material damaged by the Contractor's operations shall be replaced with new material unless otherwise approved by Owner.
- C. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect or misconduct in execution of Work, or in consequence

of non-execution of Contractor, restore, or have restored at Contractor's expense, such property to a condition similar and equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring same, or make good damage or injury in some other manner acceptable to Engineer.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01600
PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; and product delivery, storage, and handling.
- B. Related Sections
 - 1. Section 01810 – Commissioning

1.02 DEFINITIONS A.

Products:

- 1. New items for incorporation in the Work, whether purchased by Contractor or Owner for the Project, or taken from previously purchased stock; may also include existing materials or components required for reuse.
- 2. Includes the terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent and is not intended to change the meaning of such other terms used in the Contract Documents as those terms are self-explanatory and have well recognized meanings in the construction industry.
- 3. Items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

1.03 SUBMITTALS

A. Administrative Submittals: Schedule of factory tests required by Contract Documents. Identify tests for which Engineer's presence has been specified. B. Quality Control Submittals:

- 1. Factory Tests: As specified in the individual sections of the Specifications.
 - a. Procedures: Preliminary outlines.
 - b. Final accepted procedures prior to start of factory testing.
 - c. Test Documentation: Results of successful testing, including certification of procedures and results.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Altitude: Provide materials and equipment suitable for installation and operation under rated conditions at the project location's elevation, in feet, above sea level.
- B. Provide equipment and devices installed outdoors or in unheated enclosures capable of continuous operation within an ambient temperature range of minus -10 degrees F to 100 degrees F, and annual precipitation averaging 50 inches per year including 390 inches of snowfall per year.

1.05 SOURCE QUALITY CONTROL

- A. Factory Testing:
 - 1. Where Specifications call for factory testing to be witnessed by Engineer, notify Engineer not less than 14 days prior to scheduled test date, unless otherwise specified.
 - 2. Calibration Instruments: Bear the seal of a reputable laboratory certifying that instrument has been calibrated within the previous 12 months to a standard endorsed by NIST.
 - 3. Factory Tests: Perform in accordance with accepted test procedures and document successful completion.

1.06 PREPARATION FOR SHIPMENT

- A. When practical, factory assemble products. Match-mark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.
- B. Package products to facilitate handling and protect from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of Project and Contractor, equipment number, and approximate weight. Include complete packing lists and bills of materials with each shipment. C. Spare Parts, Special Tools, Test Equipment, Expendables, and Maintenance Materials:
 - 1. Furnish as required by the Specifications prior to whichever occurs first:
 - a. Starting functional testing.
 - b. Operation of the equipment by the Owner.
 - c. 75 percent project completion.
 - 2. Properly package to avoid damage, in original cartons insofar as possible. Replace parts damaged or otherwise inoperable.
 - 3. Firmly fix to, and prominently display on, each package:
 - a. Minimum 3-inch by 6-inch manila shipping tag with the following information printed clearly:

- 1) Manufacturer's part description and number.
 - 2) Applicable equipment description.
 - 3) Quantity of parts in package.
 - 4) Equipment manufacturer.
 - 5) Applicable specification section.
 - 6) Name of Contractor.
 - 7) Project name.
4. Deliver materials to site.
 5. Notify Engineer and Owner upon arrival.
- D. Store in accordance with the manufacturer's recommendations. Protect equipment from exposure to the elements and keep thoroughly dry and dust free at all times. Protect painted surfaces against impact, abrasion, discoloration, or other damage. Grease or oil all bearings and similar items.
- E. Request a minimum 7-day advance notice of shipment from manufacturers.
- F. Factory test results shall be reviewed and accepted by Engineer before product shipment as required in individual specification sections.

1.07 DELIVERY AND INSPECTION

- A. Deliver products in accordance with the accepted current progress schedule and coordinate to avoid conflict with work and conditions at the site. Deliver anchor bolts and templates sufficiently early to permit setting prior to placement of structural concrete.
- B. Deliver products in undamaged condition, in manufacturer's original container or packaging, with identifying labels intact and legible. Include on label date of manufacture and shelf life, where applicable. Include UL labels on products so specified.
- C. Unload products in accordance with manufacturer's instructions for unloading, or as specified. Record the receipt of products at the site. Inspect for completeness and evidence of damage during shipment.
- D. Remove damaged products from the site and expedite delivery of identical new undamaged products and remedy incomplete or lost products to provide that specified, so as not to delay the progress of the work.

1.08 HANDLING, STORAGE, AND PROTECTION

- A. Handle products in accordance with the manufacturer's written instructions, and in a manner to prevent damage. Store products, upon delivery, in accordance with manufacturer's instructions, with labels intact and legible, in approved storage yards or sheds. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.
- B. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in storage to facilitate inspection and to estimate progress payments for products delivered, but not installed in the work.
- C. Store electrical, instrumentation, control products, and equipment with bearings in weather tight structures maintained above 60 degrees F and below 100 degrees F. Protect electrical, instrumentation, control products, and insulation against moisture, water, and dust damage. Connect and operate continuously all space heaters furnished in electrical equipment.
- D. Store fabricated products above ground, on blocking or skids, and prevent soiling or staining. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
- E. Store finished products that are ready for installation in dry and well-ventilated areas. Do not subject to extreme changes in temperature or humidity.
- F. Hazardous Materials: Prevent contamination of personnel, the storage building, and the site. Meet the requirements of the product specifications, codes, and manufacturer's instructions.

PART 2 – PRODUCTS

2.01 PRODUCT REQUIREMENTS

- A. Provide manufacturer's standard materials suitable for service conditions unless otherwise specified in the individual specifications.
- B. Where product specifications include a named manufacturer, with or without model number, and also include performance requirements, named manufacturer's products must meet the performance requirements.
- C. Like items of products furnished and installed in the work shall be end products of one manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, and manufacturer's services and implement same or similar process instrumentation and control functions in same or similar manner.
- D. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

- E. Provide interchangeable components of the same manufacture and for similar components, unless otherwise specified.
- F. Equipment, Components, Systems, and Subsystems: Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and shall comply with applicable OSHA, state, and local health and safety regulations.
- G. Coating materials shall meet federal, state, and local requirements limiting the emission of volatile organic compounds and for worker exposure.
- H. Provide materials and equipment listed by UL wherever standards have been established by that agency.
- I. Equipment Finish:
 - 1. Provide manufacturer's standard finish and color, except where specific finish or color is indicated.
 - 2. If manufacturer has no standard color, provide equipment with ANSI No. 61, light gray color.
- J. Special Tools and Accessories: Furnish to Owner, upon acceptance of equipment, all accessories required to place each item of equipment in full operation. These accessory items include, but are not limited to, adequate oil and grease (as required for first lubrication of equipment after field testing), light bulbs, fuses, hydrant wrenches, valve keys, handwheels, chain operators, special tools, and other spare parts as required for maintenance.
- K. Lubricant: Provide initial lubricant recommended by equipment manufacturer in sufficient quantity to fill lubricant reservoirs and to replace consumption during testing, start-up, and operation until final acceptance by Owner.

2.02 METAL CASTINGS

- A. Free of voids, cracks, wormholes, and other casting defects.
- B. In accordance with applicable ASTM Standards.

2.03 LUBRICATION

- A. Require no more than weekly attention during continuous operation.
- B. Convenient and accessible. Oil drains with bronze or stainless-steel valves and fill plugs easily accessible from the normal operating area or platform. Locate drains to allow convenient collection of oil during oil changes without removing equipment from its installed position.
- C. Provide constant-level oilers or oil level indicators for oil lubrication systems.
- D. For grease type bearings, which are not easily accessible, provide and install stainless steel tubing; protect and extend tubing to convenient location with suitable grease fitting.

PART 3 – EXECUTION

3.01 FABRICATION AND MANUFACTURE

- A. Manufacture parts to U.S.A. standard sizes and gauges.
- B. Two or more items of the same type shall be identical, by the same manufacturer, and interchangeable.
- C. Design structural members for anticipated shock and vibratory loads.
- D. Use 1/4-inch-minimum thickness for steel that will be submerged, wholly or partially, during normal operation.
- E. Modify standard products as necessary to meet specifications.

3.02 INSPECTION

- A. Inspect materials and equipment for signs of pitting, rust decay, or other deleterious effects of storage. Do not install materials or equipment showing such effects. Remove damaged material or equipment from the site and expedite delivery of identical new material or equipment. Delays to the work resulting from materials or equipment damage, which necessitates procurements of new products, will be considered delays within Contractor's control.

3.03 INSTALLATION

- A. Drawings show general locations of equipment, devices, and raceways, unless specifically dimensioned.
- B. No shimming between machined surfaces is allowed.
- C. Install work in accordance with NECA Standard of Installation, unless otherwise specified.
- D. Install and apply assembled components in accordance with original component manufacturer's written instructions.
- E. Repaint painted surfaces that are damaged prior to equipment installation and acceptance by the Owner.
- F. Handle, install, connect, clean, condition, operate, and adjust products in accordance with manufacturer's instructions and as may be specified. Retain a copy of manufacturers' instruction at site, available for review at all times.
- G. For material and equipment specifically indicated or specified to be reused in the work:
 - 1. Use special care in removal, handling, storage, and reinstallation to assure proper function in the completed work.

2. Arrange for transportation, storage, and handling of products that require off-site storage, restoration, or renovation. Include costs for such work in the contract price.

3.04 FIELD TESTING

- A. In accordance with Section 01810 - Commissioning and individual specification sections.

3.05 ADJUSTMENT AND CLEANING

- A. Perform required adjustments, tests, operation checks, and other start-up activities.

3.06 LUBRICANTS

- A. Fill lubricant reservoirs and replace consumption during testing, start-up, and operation prior to acceptance of equipment by Owner.

END OF SECTION

SECTION 01720
FIELD SURVEYING

PART 1 – GENERAL

1.01 SUMMARY

- A. Work includes all professional survey services necessary for complete layout and construction staking of the proposed Work by the Contractor.

1.02 SURVEY CONTROL

- A. Vertical and horizontal datum are based on the coordinates and benchmarks shown on the Drawings or as provided by the Owner prior to the start of construction. The Contractor shall locate and protect Owner furnished control points prior to starting the Work and preserve control points during construction. The Contractor shall re-establish all control points disturbed by its operations at no cost to Owner.
- B. The Contractor shall be responsible for the preservation of all existing survey monuments or permanent benchmarks. Any monuments or benchmarks disturbed or destroyed by Contractor shall be referenced and replaced by a licensed land surveyor. A corner record or record of survey, as appropriate, shall be filed by the licensed land surveyor as required by the NRS with the appropriate local government agencies.

1.03 SURVEYS PROVIDED BY THE OWNER

- A. The Owner will provide those services listed below:
 - 1. Control points used by the surveyor will be made available digitally to the Contractor for their use.
 - 2. If Bid Alt A is awarded, survey information to locate additional manholes designated for replacement and depths of inverts and rims.
- B. All other survey needs for construction shall be the sole responsibility of the Contractor.
- A. The Contractor shall identify on the project schedule the above Work items from coordinating with the Owner.

1.04 UTILITY DATA

- A. Utility information shown on the Drawings is the best available data. The Contractor is responsible for obtaining the services of a locating company for location of utilities throughout the project.
- B. Many utilities may in fact be abandoned utilities. The Contractor must confirm with the Owner's maintenance staff on the status of utilities.
- C. Location of all utilities shall be pothole located at the point of connection. Vertical control data shall be recorded for concurrence with connection to the sewer main, prior to start of construction.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Identification: Verify location of benchmarks and control points provided by the Owner.
- B. Verify layout information shown on the Drawings in relation to the property survey and existing benchmarks before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
 - 1. Do not change or relocate benchmarks or control points without prior written approval from the Owner. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.
 - 2. Promptly notify Owner if project control points are destroyed.

3.02 PERFORMANCE

- A. Work from lines and levels established by the field survey. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
 - 1. Advise entities engaged in construction activities of marked lines and levels provided for their use.
 - 2. As construction proceeds, check every major element for line, level, and plumb.

END OF SECTION

SECTION 01770
CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.01 SUMMARY

- A. Key tasks that must be completed to close out this Contract.
- B. Related Sections
 - 1. Section 01780 – Record Drawings
 - 2. Section 01785 – Guarantees

1.02 FINAL SUBMITTALS

- A. The Contractor, prior to requesting final payment, shall obtain and submit the following items to the Engineer, as applicable:
 - 1. Final Record Drawings
 - 2. Written guarantees, where required.
 - 3. Technical Manuals and instructions.
 - 4. Maintenance stock items; spare parts; special tools.
 - 5. Completed and approved record documents.
 - 6. Certificates of inspection and certificates of acceptance by local governing agencies.
 - 7. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.
 - 8. Release form from all property Districts for which the Contractor has made agreements.

1.03 SUBSTANTIAL COMPLETION

- A. Contractor shall complete all the work within the time designated in the Agreement unless modified by Change Order or the Certificate of Substantial Completion.
- B. Should the Owner or Engineer consider that Work is not Substantially Complete:
 - 1. Owner shall notify the Contractor in writing stating reasons thereof.
 - 2. Contractor shall complete Work and send subsequent written notice(s) to Owner and Engineer certifying that Work or designated portion of the Work is Substantially Complete.

- C. Contractor shall submit all warranty certificates at the time of application for Substantial Completion. The guarantee and warranty periods begin with the date of Final Acceptance. However, in connection with any specific equipment certified by the Owner as completed and its use or operation thereof for its intended purpose is assumed by the Owner, the warranty period for such equipment shall begin with the beginning date of such use or operation.

1.04 FINAL CLEANING

A. Final Cleaning of Structures:

1. In preparation for Substantial Completion or occupancy, conduct final inspection of sightexposed interior and exterior surfaces, and of concealed spaces.
2. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
3. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
4. Broom clean paved surfaces; rake clean other surfaces of grounds.
5. Maintain cleaning until Work is complete. B. Final Cleanup of Pipelines:

1. Final cleanup work shall be completed as closely behind the Work as it is physically possible to do.
2. Unless otherwise specifically provided in writing only those portions of the completed Work will be included in the partial pay estimates where, in the Owner's or Engineer's opinion, the cleanup work has been satisfactorily completed.
3. Refer to specific sections for detailed requirements for cleanup of pipelines. C. General

Cleanup:

1. Before Final Acceptance, the Contractor shall remove and obliterate, insofar as feasible, all objects or disturbances of the ground that mar the landscape and were caused by his operations, whether or not part of the improvement.
2. Rubbish, excess materials, temporary structures, and discarded equipment shall be removed and disposed of daily.
3. Fill holes and grade to smooth land contours. Shape ends of cuts and fills to fit adjacent terrain.
4. Hand rake disturbed areas to remove loose objects including rock and clods in excess of 2 inches in any dimension.
5. Sweep pavement, curb and gutter, sidewalks and driveways.

1.05 FINAL INSPECTION

A. Final inspection shall be conducted in accordance with the Contract.

1.06 FINAL PAYMENT

A. Submit final pay request to Owner in accordance with the Contract.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01780
RECORD DRAWINGS

PART 1 – GENERAL

1.01 SUMMARY

- A. Requirements and procedures for Record Drawing preparation, updates, review, and submittal.

1.02 DEFINITIONS

- A. Record Drawings refer to those documents maintained and annotated by the Contractor during construction and are defined as:
1. A neatly and legibly-marked set of Contract Drawings showing the final as-built location and size of piping, equipment, electrical conduits, outlet boxes, cables, panels, and any other major elements of the Work.
 2. Additional as-built documentation, such as schedules, lists, drawings, standard details, and electrical and instrumentation diagrams included in the Contract Documents or Shop Drawings.
 3. Contractor as-built layout and installation drawings.

1.03 RECORD DRAWING REQUIREMENTS

- A. Unless otherwise specified, Record Drawings shall be full size and maintained in a clean, dry, and legible condition.
- B. Record documents shall not be used for construction purposes and shall be available for review by the Engineer during normal working hours at the Contractor's field office.
- C. At the completion of the Work, prior to final payment, completed Record Drawings shall be submitted to the Engineer. The Contractor is responsible for submission of the completed Record Drawing set for all portions of the Work including those portions performed by subcontractors. The Record Drawing submitted will be rejected unless all Contract Drawings and all disciplines are included. Submit original with color markup as described below.
- D. Marking of the Drawings shall be kept current and shall be done at the time the material and equipment is installed.
- E. Changes shall be made to the Record Drawing when items are installed 0.25 feet horizontal or 0.1 feet vertically or more from the location designated on the Contract Drawings.
- F. Annotations to the record documents shall be made with an erasable colored pen or pencil conforming to the following color code:
1. Additions/Modifications: Red.
 2. Deletions: Green.

3. Comments: Blue.

- G. Legibly mark to record actual depths and slopes, horizontal and vertical location of underground raceways, cables, and appurtenances referenced to permanent surface improvements.
- H. The Contractor's Record Drawings will be reviewed monthly by the Engineer for completeness prior to preparing the progress estimate for payment. If the Record Drawings do not reflect the work performed, a portion of the payment for that item of work will be withheld from the progress estimate.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01785
GUARANTEES

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section defines Contractor responsibilities and procedures to guarantee the equipment and facilities installed under this Contract. Requirements of this specification do not release the Contractor from fulfilling those requirements as stated in Supplementary Conditions of this Contract. Specific guarantees above and beyond the basic one-year guarantee are indicated in the technical specification sections.
- B. Related Sections
 - 1. Section 00700 – General Conditions
 - 2. Section 00800 – Special Provisions
 - 3. Section 01770 – Closeout Procedures

1.02 GUARANTEE REQUIREMENTS

- A. For a period of 365 consecutive calendar days, commencing on the guarantee start date (but commencing only as to such portions of the Work so possessed or used), the Contractor shall, upon the receipt of notice in writing from the Owner or Engineer, promptly correct any defective Work.
 - 1. If the defective Work cannot be corrected, or if the corrected Work has been rejected by the Owner or Engineer, the Contractor shall promptly remove it from the site and replace it with non-defective Work, all at no cost to the Owner.
 - 2. The Owner is hereby authorized to make such corrections if, ten days after giving of such notice to the Contractor, the Contractor has failed to make or undertake the corrections or removal/replacement with due diligence.
 - 3. In case of an emergency where, in the opinion of the Owner, delay could cause serious loss or damage, corrections, or replacement may be made prior to or concurrent with notice being sent to the Contractor. All expenses in connection with such corrections or replacement, including costs for professional services, will be charged to the Contractor. This guarantee shall be extended for a period equal to the time of correction or replacement.
- B. Acceptance of the work shall not extinguish any covenant or agreement on the part of the Contractor to be performed or fulfilled under this Contract which has not, in fact, been performed or fulfilled at the time of such acceptance. All covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

- C. The guarantee provided in this section shall be in addition to those specific guarantee or warranty requirements for particular equipment and/or work items indicated in the Specifications, and in addition to any other rights or remedies available to the Owner under this Contract or at law.

1.03 DETERMINATION OF GUARANTEE DATES

- A. As required in Section 00700 – General Conditions.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 DOCUMENTATION

- A. Guarantee dates as required in Section 00700 – General Conditions shall be recorded and submitted to the Owner or Engineer.
- B. The guarantee information shall be documented by specification section, in the same order as presented in the Operations and Maintenance manuals.
- C. Vendor information, including point-of-contact, company name, company address, and company emergency telephone number, shall be included for applicable equipment and components of the facility.

3.02 GUARANTEE RESPONSE

- A. The Owner or Engineer or appointed representative shall be the point-of-contact for response to guarantee-related problems during the one-year guarantee period. The Owner or Engineer shall evaluate the problem and initiate the guarantee response by the appropriate vendor or contractor.
- B. For special guarantees extending beyond the one-year guarantee period, Owner personnel shall contact the appropriate vendor directly as identified on the Guarantee Documentation Form.
- C. Upon notification of need for guarantee response, the Contractor shall provide written notification to the Owner initiator, indicating scheduled time of response so that Owner maintenance personnel may be scheduled to be on hand to provide assistance and witness the repair. Guarantee work may only be undertaken on Mondays through Fridays, from 8:00 a.m. to 5:00 p.m., unless the Owner gives express written consent for the performance of the work at other times.
- D. Items requiring guarantee response within the one-year guarantee period shall have a completely new guarantee period established from the time of repair. The Contractor shall provide written verification of the newly established guarantee period to the Owner or Engineer upon completion of the repair.

END OF SECTION

SECTION 01810
COMMISSIONING

PART 1 – GENERAL

1.01 SUMMARY

- A. This section specifies the installation, testing, and commissioning for all mechanical, electrical, and instrumentation systems furnished by the Contractor and completed portions of the Work, functioning as completed facilities and a complete project.
- B. Related Sections
 - 1. Section 01450 – Quality Control
 - 2. Section 01458 – Testing Laboratory Services
 - 3. Section 01785 – Guarantees

1.02 SUBMITTALS:

- A. When specified in the individual specifications, submit:
 - 1. Qualifications of manufacturer’s representative performing specified services.

1.03 CONFLICTS WITH MANUFACTURER’S INSTALLATION RECOMMENDATIONS

- A. All equipment provided under this Contract shall be installed in conformity with the details shown and specified and with the manufacturer’s requirements. Should a manufacturer’s installation recommendations conflict with specific requirements of this Contract Document, the Contractor shall bring the matter to the attention of the Engineer. Any costs incurred by the Contractor through failure to timely notify the Engineer of a difference between Contract Document and manufacturer’s installation requirements shall be borne by the Contractor. Any costs incurred by the Contractor due to installation of alternative equipment shall be borne by the Contractor.

1.04 TESTING

- A. All equipment and partially complete or fully complete portions of the Work included in this Contract shall be tested and inspected to prove compliance with the requirements of these Specifications. Unless otherwise specified, all costs of testing, including temporary facilities and connections, shall be borne by the Contractor.
- B. No tests specified herein shall be applied until the item to be tested has been inspected and approval given for the application of such test. C. Tests and inspection shall include:
 - 1. The delivery acceptance test and inspections.

2. The installed tests and inspections for water and sewer piping.
- D. Tests and inspections, unless otherwise specified or accepted, shall be in accordance with the recognized standards of the industry. The Contractor shall see that scheduling and performance of all tests are coordinated with involved subcontractors and suppliers.
 - E. A master test logbook shall be maintained by the Contractor, which shall cover all tests, including piping, equipment, electrical, and instrumentation. The master test logbook shall be provided with loose-leaf pages, which shall be copied weekly after updating for transmittal to the Engineer.

1.05 DELIVERY ACCEPTANCE TESTS AND INSPECTIONS

- A. The form of evidence of satisfactory fulfillment of delivery acceptance test and inspection requirements shall be, at the discretion of the Engineer, either by tests and inspections carried out in his presence or by certificates or reports of tests and inspections carried out by approved persons or organizations. The Contractor shall provide and use forms, which include all test information including specified operational parameters. The forms used shall be acceptable in content to the Engineer.
- B. The delivery acceptance tests and inspections shall be at the Contractor's expense for any equipment specified in these Contract Documents and shall include the following:
 1. Test of items at the place of manufacture during and/or on completion of manufacture, comprising hydraulic pressure tests, electric and instrumentation subsystems tests, performance and operating tests, and inspections in accordance with the relevant Standards of the industry and more particularly as details in individual clauses of these Specifications to satisfy the Engineer that the items tested and inspected comply with the requirements of this Contract.
 2. Inspection of all items delivered at the site or to any authorized place of storage in order that the Engineer may be satisfied that such items are of the specified quality and workmanship and are in good order and condition at the time of delivery. The Contractor shall be prepared to remove all coverings, containers, or crates to permit the Engineer to conduct his inspection. Should the Engineer find, in his opinion, indication of damage or deficient quality of workmanship, the Contractor shall provide the necessary documentation, or conduct such tests deemed necessary by the Engineer, to demonstrate compliance.

1.06 INSTALLED TESTS AND INSPECTIONS

- A. General: All equipment shall be tested by the Contractor to the satisfaction of the Engineer before any facility is put into operation. Tests shall be as specified herein and shall be made to determine whether the equipment has been properly assembled, aligned, adjusted, and connected. Any changes, adjustments, or replacements required to make the equipment operate as specified shall be carried out by the Contractor as part of the Work.
- B. Procedures:

1. Prior to receipt of any progress payments in excess of 60 percent of the Contractor's total bid for the Work, the Contractor shall submit to the Engineer, details of the installed tests and inspection procedures he proposes to adopt for testing and start-up of all equipment to be operated singly and together, excepting when such procedures have been covered in the Technical Specifications.
2. The procedures shall be divided into two distinct stages: preoperation checkout and operational testing. Testing procedures shall be designed to duplicate, as nearly as possible, all conditions of operation and shall be carefully selected to ensure that the equipment is not damaged. Once the testing procedures have been reviewed by the Engineer, the Contractor shall produce checkout, alignment, adjustment, and calibration sign-off forms for each item of equipment to be used in the field by the Contractor and the Engineer jointly to ensure that each item of electrical, mechanical, and instrumentation equipment has been properly installed and tested. The Contractor is advised that failure to observe these precautions may place the acceptability of the subject equipment in question. C. Preoperation Checkout:
 1. The installed tests and inspection procedures shall incorporate all requirements of these Specifications and shall proceed in a logical, step-wise sequence to ensure that all equipment has been properly serviced, aligned, connected, calibrated, and adjusted prior to operation. Preoperation checkout procedures shall include, as applicable, but not necessarily be limited to:
 - a. Piping system pressure testing and cleaning as specified.

D. Operational Testing

1. After completion of testing and certification by the Engineer that all equipment complies with the requirements of the Specifications, the Contractor shall perform the operational testing.
2. Operational Testing shall include at a minimum:
 - a. Ensuring all valve boxes, cleanouts, meter boxes, vault lids, and manhole covers are operational.
 - b. Operation of all pump stations.
 - c. Operation of flow meters.
 - d. Operation of all vault components including air release valves, isolation valves, check valves, pressure gauges, sample taps, etc.
3. Satisfactory completion of operational testing will be required by the Owner as a condition of determining when substantial completion has been achieved.
4. All manufacturers' O&M manuals shall have been submitted for review, and approved, prior to beginning operational testing.

1.07 COMMISSIONING

- A. After completion of all operational testing specified herein, and certification by the Engineer that the systems did meet all performance requirements, commissioning will begin.
- B. The Contractor shall remove all temporary piping that may have been used during the operational testing and shall assist the Owner in placing the facilities in fully operational mode. The Owner's operations and maintenance personnel will be responsible for the operation of the facilities. The facilities shall be fully operational, accepting all normal flow called for in design and performing all functions as designed.
- C. The Contractor shall be available at all times during commissioning periods to provide immediate assistance in case of failure of any portion of the system being tested.
- D. During the commissioning period, the Owner shall be responsible for all normal operational costs, and the Contractor shall bear the costs of all necessary repairs or replacements, including labor and materials required to keep the portion of the facilities being commissioned operational.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Installation: Materials employed in the installation shall conform to the requirements of this Contract Document and the recommendations of the equipment manufacturers. B. Testing:

- 1. Gauges, Meters, Recorders, and Monitors:
 - a. Gauges, meters, recorders, and monitors shall be provided by the Contractor as required by the Engineer to supplement or augment the instrumentation system provided under this Contract to properly demonstrate that all equipment fully satisfies the requirements of this Contract Document. All devices employed for the purpose of measuring the performance of the facility's equipment and systems shall specifically be selected to be consistent with the variable being monitored. All instruments shall be recently calibrated and the Contractor shall be prepared at all times to demonstrate, through recalibration, the accuracy of all instruments employed for testing purposes. Calibration procedures shall be in accordance with applicable Standards of ASTM, ISA, and IEEE. The adequacy of all gauges, meters, recorders, and monitors shall be subject to review of the Engineer.
- 2. Records:
 - a. The Contractor shall provide sign-off forms for all installed and operational testing to be accomplished under this Contract. The sign-off forms shall be produced in quadruplicate on pressure-sensitive paper. Sign-off forms shall be provided for each item of mechanical, electrical, and instrumentation equipment provided or installed under this Contract and shall contain provisions for recording relevant performance

data for original testing and not less than three retests. Separate sections shall be provided to record values for the preoperation checkout, initials or representatives of the equipment manufacturers, the Contractor, and the Engineer.

- b. The Contractor shall maintain a master file of all equipment sign-off sheets, which shall be available for inspection by the Engineer. Upon completion of testing, the Contractor shall furnish the Engineer with the original and two copies of the sign-off sheet for each equipment item.

2.02 METHODS

- A. Installation: All equipment and apparatus used in testing shall be installed by specialists properly skilled in the trades and profession required to assure first-class workmanship. Where required by detailed specifications, the Contractor shall cause the installation of specific equipment testing items to be accomplished under the supervision of factory-trained installation specialists furnished by the equipment manufacturers. The Contractor shall be prepared to document the skills and training of all workmen engaged in the installation of all testing equipment furnished either by the Contractor or the Owner.
- B. Testing:
 - 1. Testing shall proceed on a step-by-step basis in accordance with the Contractor's written testing procedures. The Contractor's testing work shall be accomplished by a skilled team of specialists under the direction of a coordinator whose sole responsibility shall be the orderly, systematic testing of all equipment, systems, structures, and the complete facility as a unit. Each individual step in the procedures shall be witnessed by a representative of the Engineer.
 - 2. During the operational testing period, all equipment and systems in operation shall be operated to the greatest extent practicable and at conditions that represent the full range of operating parameters as defined by this Contract Document.

PART 3 – EXECUTION

3.01 COMMISSIONING AND OPERATIONAL TESTING

- A. Unless otherwise noted, a time period of 7 days shall be allowed for commissioning of Project.
- B. Unless otherwise noted, each operational test must be through the complete design range for a period of 48 consecutive hours.

END OF SECTION

SECTION 01999
PROJECT FORMS

PART 1 – GENERAL

1.01 SUMMARY

- A. Information and use of forms that will be used during the performance of Work.

1.02 FORMAT

- A. The forms listed below will be used for performance of the Work as indicated. This is not a complete listing of all required forms. The Contractor shall properly complete all forms required by the Contract Documents or the Engineer. The Engineer shall review and approve all submitted forms. If submitted forms are not acceptable, the Contractor shall resubmit forms in an acceptable format.

- 1. Substitution of forms by Contractor may occur upon review and approval of Engineer prior to use.

- B. Electronic Versions: Forms will be provided in either Microsoft Word, Microsoft Excel, or PDF format.

1.03 FORMS

- A. Application for Payment (EJCDC Form)
- B. Weekly Quantity Installed Certification Form
- C. Change Order (EJCDC Form)
- D. Submittal Transmittal
- E. Wage Rate Comparison
- F. Wage Rate Certification Form
- G. Employee Non-Performance Form
- H. Guarantee Documentation Form
- I. Certificate of Substantial Completion (EJCDC Form)
- J. Release and Certificate of Payment Form

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 COMPLETING FORMS

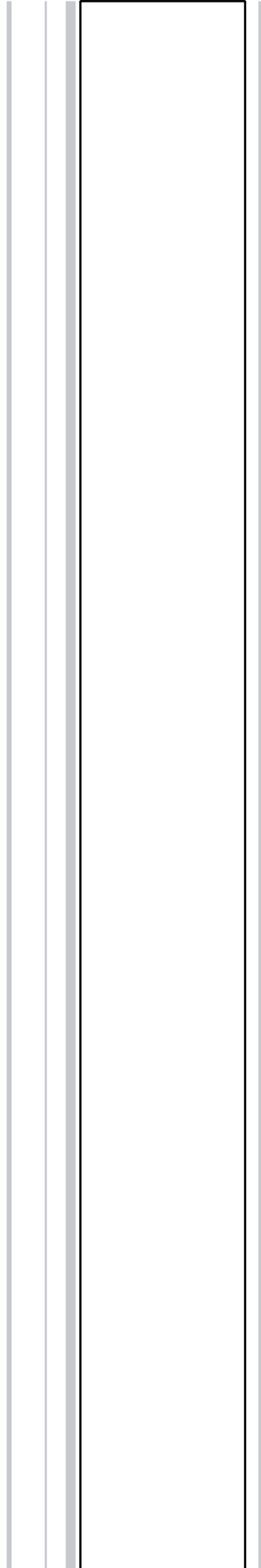
- A. All documents are to be filled out by the Contractor using the format provided by the Engineer. It is at the discretion of the Engineer if other forms or formats will be accepted.

3.02 SIGNING FORMS

- A. Original hand-written signatures are acceptable for all documents. The Contractor is to fill out the document either digitally or legibly prior to signing the hard copy.
- B. Use of digital signatures will be discussed and agreed upon before use.

END OF SECTION

Division 2
Site Construction



SECTION 02240
DEWATERING

PART 1 – GENERAL

1.01 SUMMARY

A. The work of this section consists of providing all labor, materials, and equipment necessary to dewater trench and structure excavations. B. Related Sections.

1. Section 02315 – Excavation and Backfill.

1.02 SUBMITTALS

- A. Refer to Section 01330 – Submittal Procedures for general submittal requirements.
- B. Appropriate CalEPA, Placer County, or local sewage treatment agency discharge permits.
- C. Two weeks prior to installation of dewatering facilities and commencement of excavation, submit:
 1. A dewatering plan.
 2. Drawings and descriptions indicating numbers, locations, arrangements, depths, capacities, and construction details, as applicable, of all dewatering system equipment and components, including standby equipment and components.
 3. Methods of disposal of pumped water.
 4. Methods of diverting precipitation and surface water away from excavations.
 5. Method for collecting and removing precipitation within excavations as necessary.
 6. Copies of executed permits necessary to perform work.
- D. Photographs or videotape. Sufficiently detailed, of existing conditions, of adjoining construction and site improvements that might be misconstrued as damage caused by dewatering operations.

1.03 DEFINITIONS

- A. Contributing Water Source: The contributing water source requiring dewatering shall include all water that infiltrates trenches or any excavation. Sources of contributing water include, but are not limited to aquifer infiltration, perched groundwater, storm event/snow melt runoff or infiltration, construction water contributions, and water pipe breaks or leaks.

1.04 PERFORMANCE REQUIREMENTS

- A. Design, provide, test, operate, monitor, and maintain a dewatering system of sufficient scope, size, and capacity for conditions encountered. Contractor to control ground water and surface-water flow into excavations and permit construction to proceed on dry, stable subgrades. Work includes:

1. Maintain dewatering operations to ensure flooding of excavation and damage to structures is prevented, erosion is controlled, stability of excavations and constructed slopes is maintained, and prevent surface water from entering excavations by grading, dikes, or other means.
2. Accomplish dewatering without damaging existing improvements and/or facilities adjacent to the excavation.
3. Minimize sediment loading to receiving waters or channel by filtering water with Agency approved methods such as a Baker tank, sandbag filter, and dirt bag. Filtering equipment shall be sized appropriately for amount of flow encountered. B. Removal of dewatering system when no longer needed.

1.05 REGULATORY REQUIREMENTS AND PERMITTING

- A. The Contractor shall have on hand, at all times, sufficient pumping equipment and machinery in good working condition and shall have available, at all times, competent workmen for the operation of the pumping equipment. Adequate standby equipment shall be kept available at all times to insure efficient dewatering and maintenance of dewatering operation during power failure.
- B. Dewatering shall commence at an appropriate time prior to commencing excavation, and shall be continuous until facilities and structures are completed, backfilled, and, as appropriate, filled with water to prevent damage from hydrostatic uplift and/or floatation.
- C. Excavations extending below site groundwater levels or which encounter perched groundwater within permeable soil layers shall be dewatered. Dewatering of narrow trench excavations that penetrate less than a few feet below the groundwater level and do not encounter loose and/or cohesionless soils may be possible by directing inflow to a sump where water can be removed by a pump. Temporary dewatering of wider, deeper, and/or more extensive excavations may require well points, perimeter trench drains, and/or deep sumps. To help maintain bottom stability of wider, deeper, and/or more extensive excavations, groundwater levels shall be drawn down a minimum of 5 feet below the lowest portion of the excavation.
- D. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at the proposed bottom of excavation and protect temporary excavation slope stability during construction. If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with drain rock on geotextile fabric at no additional cost to the Owner.

1.06 SITE CONDITIONS

- A. Site specific field explorations were not performed by the Owner for project work areas. See Appendix A for geotechnical information available to the Contractor.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
 - 1. Prevent groundwater from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.
 - 2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

3.02 EXCAVATION DEWATERING

- A. Design and install dewatering system utilizing wells, well points, sumps, or similar methods complete with pump equipment, standby power, filter materials, valves, appurtenances, and water disposal piping.
 - 1. Provide an adequate system to lower and control or discharge ground water to permit excavation, construction of improvements, and placement of fill materials on unsaturated, stable subgrades.
 - 2. Do not permit pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
- B. Contractor shall dewater in such a manner that will not damage public or private property or create a nuisance or health menace. The Contractor shall furnish, install, and operate pumps, pipes, appliances, and equipment of sufficient capacity to keep the site and/or trenches free from water.
- C. Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on a continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense.
- D. The Contractor shall provide all means or facilities necessary to conduct water to the pumps.

3.03 DEWATERING DISPOSAL

- A. The Contractor shall dispose of the water in accordance with the project requirements, Agency approvals, and permits.

- B. The Contractor shall be responsible to design and control the dewatering operations such that disposal of water does not cause erosion or other damage and such that water to be disposed of is free from silt and other objectionable materials. Settling basins and/or other means shall be used as necessary.

3.04 SITE CLEAN UP AND REPAIR

- A. Remove dewatering system from site upon completion of dewatering.
- B. Upon completion of dewatering operations, leave area in condition as good as or better than existed prior to dewatering operations.
- C. Promptly repair damages to adjacent facilities caused by dewatering operations.

END OF SECTION

SECTION 02255

SHORING

PART 1 – GENERAL

1.01 SUMMARY

- A. This section covers requirements for design, construction, maintenance, and removal of temporary shoring, sheeting, and bracing systems. The work includes, but is not limited to, structural support of excavations, trenches, and embankments greater than 4 feet in depth necessary for protection of personnel and existing or recently constructed facilities and utilities.

1.02 DEFINITIONS

- A. Temporary Shoring: An assembly of structural elements to support earth materials. Temporary shoring includes, but is not limited to, shoring, sheeting, bracing, and underpinning.
- B. Existing Facility: A structure, utility, or constructed element that exists at the start of construction and is not shown on the contract drawings to be demolished. This definition also applies to recently constructed facilities or utilities that are constructed under this Contract.
- C. Engineered Temporary Shoring: Shoring that is designed by the Contractor. These structures shall be designed by a Structural Engineer registered in the State of California to meet, as a minimum, the requirements of this Specification and Contract Drawings.

1.03 SUBMITTALS

- A. Shoring Plan describing shoring materials and techniques proposed for project use and safety guidelines and procedures to be followed.
- B. Design Submittals for shoring of excavations 20 feet and greater in height
 - 1. The Contractor shall submit his plans for shoring and sloping to the Engineer for review at least three weeks prior to commencement of work. No excavation shall be started until the Engineer has reviewed the shoring system. The design submittals shall include the following items:
 - a. Design calculations shall be prepared by a Structural Engineer registered in the State of California and include design criteria, analysis assumptions, construction sequence requirements, and detailed design of each system, structural elements, and connection. Calculations shall be submitted in bound volumes that include the responsible Structural Engineer's signed seal on the title page.
 - b. Detailed excavation support drawings (working drawings), showing all pertinent dimensions, spacing, and relationships among the components of the trench support system, as well as construction sequence and scheduling.

- c. Detailed utility and structure support drawings where necessary.
- 2. Shop Drawings:
 - a. Shop fabrication details for all fabricated structural steel members and connections. b. Lagging details.
 - c. Concrete reinforcing details.
- 3. Monitoring Program: A proposed program shall be submitted for monitoring temporary shoring system movements. The submittal of the program shall include location of survey points, proposed frequency of measurements, and other pertinent information.
- 4. Records of Monitoring Program: Records of the monitoring program shall be submitted as proposed in program submittal approved by Engineer.
- 5. Method of drilling soldier piles, including method or technique for handling obstructions, if applicable.

1.04 STANDARD SPECIFICATIONS, CODES AND ORDINANCES

- A. OSHA: Occupational Safety and Health Administration: Part 1926, Subpart P, "Excavations."

1.05 SAFETY

- A. The Contractor is solely responsible for protection of personnel and existing facilities and utilities and for ensuring compliance with all applicable laws and regulations.
- B. Responsible Competent Person: The Contractor shall have in the shoring work area during all phases of construction, a competent person capable of identifying hazards, anomalies, conditions that differ from the shoring design assumptions, and other factors that would indicate the possibility of hazardous or dangerous conditions in the work area. The responsible person shall have the authority to stop all work when such conditions are identified.
- C. All temporary construction and incidental items associated with shoring construction such as, but not limited to, lighting, barricades, fences, ladders, work platforms, ramps, and roadways shall conform to the applicable reference codes and regulations.

1.06 QUALITY ASSURANCE

- A. The Contractor is solely responsible for quality assurance of temporary shoring. At a minimum, the Contractor shall continually verify that the shoring is planned, executed, and maintained in accordance with applicable codes and regulations and good construction practice.
- B. The Contractor shall institute as a part of shoring construction a quality assurance program at each shoring location. The program shall include, but not be limited to, systematic observation of

suitability of shoring materials, installation, excavation, groundwater control adjacent construction activities, and other factors.

- C. The responsible Engineer for engineered temporary shoring shall verify at critical stages of shoring construction that the actual construction is in accordance with the Contractor prepared plans.
- D. Installation procedures for instrumentation shall be as recommended by the manufacturer.

1.07 EXISTING CONDITIONS

- A. The Contractor shall make its own interpretations, deductions and conclusions as to the nature of the materials to be excavated, the difficulties of making and maintaining the required excavations, and the difficulties of doing any other work affected by geotechnical conditions, and shall accept full responsibility therefore.
- B. Reference drawings shall be used to determine extent, characteristics, and loading conditions of existing facilities for design of temporary shoring systems. Building weights, surcharges, design live loads, and liquid loadings among others shall be developed by the Contractor for use in temporary shoring design.
- C. The Contractor shall promptly, and before such conditions are disturbed, notify the Engineer in writing of any subsurface or latent physical conditions at the site which differ materially from those indicated in the Contract and which could not reasonably have been anticipated by the Contractor. This notice shall be made within ten days of discovery of such condition. No claims of the Contractor under this clause will be allowed unless the Contractor has provided the required notice.
- D. If the Engineer finds there are subsurface or latent physical conditions that differ materially from those indicated in the Contract and that could not reasonably have been anticipated by the Contractor and that such conditions cause an increase or decrease in the Contractor's cost of or time required for performance of work, a change order incorporating the necessary revisions shall be prepared in accordance with Article 10 and submitted to the Owner for approval. If the Engineer finds there are no such subsurface or latent physical conditions, or if no decision has been made in writing within ten days of the written notice of conditions above (which 10th day shall be deemed the date on which the Engineer denied the claim), the Contractor must submit a claim documenting its costs in accordance with Article 10 and in a manner and level of detail satisfactory to the Engineer and Owner. No claim by the Contractor for an equitable adjustment hereunder will be allowed if asserted after final payment under this Contract.
- E. This paragraph shall not be construed or interpreted to allow claims by the Contractor for physical conditions ordinarily to be encountered or generally recognized as inherent in the work.

1.08 DESIGN REQUIREMENTS

- A. Engineered temporary shoring shall be designed in accordance with the requirements of these Specifications, which include, but are not limited to, geotechnical, design, and review considerations. Other shoring or bracing shall be planned in accordance with applicable codes and good construction practice.

- B. Shoring shall be designed and constructed to withstand all soil and hydrostatic loading that might occur during various stages of construction and for any surcharge loading caused by equipment loads and loads from material or soil stockpiles. The Contractor shall be responsible for determination of proper load distributions caused by such activities and shall assure that those conditions are not exceeded in the field during construction.
- C. The design, planning, installation, and removal of all sheeting, shoring, sheet piling, lagging, and bracing shall be accomplished in such a manner as to maintain the required excavation of trench section and to maintain the undisturbed state of the soils below and adjacent to the excavation.
 - 1. The Contractor shall design sheeting, shoring, and bracing in accordance with Federal OSHA Safety and Health Standards Section 2207.
- D. Horizontal strutting below the barrel of a pipe and the use of pipe as support are not acceptable.
- E. When the construction sequence of structures requires the transfer of bracing to completed portions of any new structure or to any existing structure, the Contractor shall provide the Engineer with a complete design analysis of the expected impact of that bracing on the structure. This action shall in no way absolve the Contractor of responsibility of damage resulting from said bracing.

1.09 PROTECTION OF EXISTING FACILITIES

- A. Protect existing and new buildings and structures and active sewer, water, gas, electricity, and other utility services.
- B. Coordinate the nature and extent of such protection with the Owners of the building, structures, and utilities.

1.10 RESTORATION OF EXISTING FACILITIES

- A. Contractor shall restore all existing facilities damaged, destroyed, or altered by soil movements resulting from temporary shoring movements or nonperformance, at Contractor's own expense.
- B. Proposal shall be submitted by the Contractor to define the character and extent of the Contractor's proposed restoration work when requested by the Engineer. Actual restoration work shall be as directed by the Engineer and may or may not include any or all of the Contractor's proposal.

PART 2 – PRODUCTS

2.01 MATERIALS FOR SHORING

- A. All materials for temporary shoring shall conform to the requirements of these Specifications and any specifications, notes, or requirements contained on the Contractor's submittals or Contractor-prepared designs for temporary shoring. Materials may be new or used, but they should be in good serviceable condition, free of defects and other strength-reducing deficiencies.

PART 3 – EXECUTION

3.01 GENERAL

- A. The construction of sheeting, shoring, and bracing shall not disturb the state of soil adjacent to the trench or excavation and below the excavation bottom. Sheeting, shoring, and bracing shall be removed after placement and compaction of initial backfill, except as noted otherwise.
- B. The design, planning, installation, and removal of all lagging, sheeting, shoring, sheet piling, and bracing or moveable trench box system shall be accomplished in such a manner as to maintain the undisturbed state of the soils.
- C. Sheeting and shoring systems shall be selected and installed so as to avoid damage to adjacent properties and improvements.

3.02 PROTECTION OF EXISTING FACILITIES

- A. Care must be taken to minimize settlements and displacements of existing facilities by providing appropriate shoring systems and strict adherence to suitable construction practices for that Contractor proposed shoring systems.
- B. The causes of the detrimental movements or excessive settlements must be identified by the Contractor. Corrective measures must be proposed to and approved by the Engineer before further work.

3.03 OBSTRUCTIONS

- A. Obstructions and other impediments to drilling and excavation should be considered a possibility within the Limits of Construction. If, during the course of work, obstructions are encountered, the Engineer should be immediately notified. Corrective measures must be proposed to and approved by the Engineer before further work.

3.04 REMOVAL OF SHORING

- A. Shoring may be removed only if public safety is maintained, completed work is protected, existing facilities are protected, and adequate steps are taken to prevent damage to facilities or personnel during removal. At a minimum, remove the upper portion of all shoring systems down at least 5 feet below finish grade, unless otherwise indicated. Voids created by removal of piles, sheeting, or lagging shall be filled with the backfill materials shown on the Drawings at or adjacent to the shoring area.
- B. Should the Engineer order that any shoring be left in place, the Contractor shall not remove the same, but will receive payment for the materials left in place on a unit basis if such be in the Contract or at the market value thereof if there be no such unit price.

END OF SECTION

SECTION 02315
EXCAVATION AND BACKFILL

PART 1 – GENERAL

1.01 SUMMARY

- A. This section includes the following in support of utilities and associated structures construction:
 - 1. Preparing subgrades and base materials.
 - 2. Utility trench excavation and backfill.
- B. Related Sections
 - 1. Section 01330 – Submittal Procedures
 - 2. Section 01458 – Testing Laboratory Services
 - 3. Section 01570 – Temporary Controls
 - 4. Section 01720 – Field Surveying
 - 5. Section 02240 – Dewatering
 - 6. Section 02255 – Shoring
 - 7. Section 02530 – Sanitary Sewerage
 - 8. Section 02740 – Flexible Pavement

1.02 SPECIFIC STANDARDS

- A. All construction materials and methods shall conform to the requirements of the County of Placer General Specifications dated April 2018.
- B. All references to State of California, Department of Transportation Standard Specifications shall refer to the 2018 Edition of the Standard Specifications.

1.03 DEFINITIONS

- A. Trench – An excavation in which the depth is greater than the width of the bottom of the trench.
- B. Foundation – Material on which pipe bedding or the structure is to be directly placed.
- C. Bedding – Granular material that pipe or structure rests.
- D. Initial Backfill:

1. No groundwater encountered. Material from the bedding to 12 inches above the top of the pipe.
 2. Groundwater encountered. Material from the bedding to 12 inches above level of the groundwater prior to dewatering.
- E. Final Backfill – Material from top of initial backfill to top of trench.
- F. Unsuitable Materials: Organic matter such as peat, mulch, organic silt or sod; expansive clays; material containing excessive moisture; poorly graded coarse material; material with particle sizes greater than 4 inches; material that will not achieve density and/or bearing requirements; construction debris; and frozen material.
- G. Fine Grained Soils. More than 40 percent by weight passing the number 200 sieve and a plastic index lower than 15.
- H. Clay Soils. More than 40 percent by weight passing the number 200 sieve and a plastic index greater than 15.
- I. Granular Soils. Those not defined as Fine Grained or Clay Soils.
- J. Rippable Rock. Fractured rock that can be excavated and trenched using conventional excavation techniques.
- K. Bedrock. Material that cannot be excavated economically with conventional excavation techniques including a large excavator with the aid of a hoe ram or a single tooth ripper on a large bulldozer.
- L. Borrow: Satisfactory soil imported from off site for use as fill or backfill.
- M. Conventional Excavation Techniques. Common excavation equipment including, but not limited to, hoe excavators, scrapers, loaders, bulldozers, bulldozers with ripper(s), and hoe rams, etc.
- N. Relative Compaction. Relative compaction is defined as the ratio, in percent, of the as-compacted dry density to the laboratory maximum dry density. The laboratory maximum dry density is defined in accordance with ASTM D1557, latest edition.
- O. Well Graded. Well graded as used in this section defines a mixture of soil particle sizes that have no specific concentration or lack thereof of one or more sizes. Well graded is used to help define a material that, when properly compacted, produces a strong and relatively incompressible soil.
- P. Rock Excavation: Rock excavation is defined as excavation of all solid rock in place that cannot be removed by power equipment equivalent to a CAT 350 Trackhoe Excavator, or larger, having a two-cubic yard rock bucket with “tiger teeth” and all boulders or detached pieces of rock greater than 54 cubic feet in volume.

1.04 SUBMITTALS

- A. Follow the procedures specified in Section 01330 – Submittal Procedures.

- B. Submit copies of each load delivery ticket of imported material delivered to the jobsite. Ticket shall identify tonnage.
- C. Perform and submit sample analysis for each type of import material to demonstrate proper specification compliance. No import material will be accepted or approved by the Owner without above submittals prior to delivery to jobsite.
- D. Submit each/all soil materials and compaction density testing reports to the Owner immediately following completion of each test.
- E. Gradation curve test reports for each import material at least 15 working days prior to use of material.
- F. Gradation and moisture density compaction curve test reports for each import material at least 15 working days prior to use of material.

1.05 QUALITY CONTROL ASSURANCE

- A. Soils and Backfill: ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort or AASHTO T-180 – Standard Method of Test for Moisture-Density Relations of Soils using a 4.54-kg Rammer and a 457-mm Drop, unless otherwise specifically approved.
- B. In-place Density Determination: Sandcone Method ASTM D1556 or Nuclear Method ASTM D2922.
 - 1. Foundation and Embankment Under Structures and Backfill Zone Around the Structure's Wall and Other Embankment: For each 1 foot of vertical embankment or backfill height, conduct one test for each 3,000 square feet, or two tests total for each 1 foot of height, whichever is greater.
 - 2. Foundation and Embankment Under Pipelines: For each 1 foot of vertical embankment or backfill height, conduct one test for every 500 feet along the pipeline or as determined by Owner or Engineer.
- C. Classification of Soils: ASTM D2487.
- D. On-site quality control monitoring of trench backfill materials and construction shall be by certified independent laboratory approved by the Owner.
- E. The Engineer or geotechnical consultant will identify areas requiring over-excavation and backfill and review excavated material to determine its suitability as backfill material. F. Testing Tolerances.
 - 1. Percent Compaction: Not less than as specified on Plans or in these Specifications.
 - 2. In-Place Moisture Content: As required to achieve minimum specified compaction.

3. Soft or Yielding Surfaces: Regardless of percent compaction obtained by test, areas that are soft and yield (pumping) under the load of construction equipment are to be removed and replaced at no additional cost.

G. See Section 01458 – Testing Laboratory Services for Contractor soil testing responsibilities.

1.06 PROJECT CONDITIONS

A. Verification of Site Conditions: Both prior to bidding and before commencing site work, the Contractor will be expected to visit and inspect all areas of the project site. Examine and note all conditions pertaining to the work involved so that earthwork may be executed in an orderly and careful manner with due consideration for surrounding areas, structures, vegetation, soil conditions, and all other site conditions which will directly impact the work. B. See Appendix A for geotechnical information.

1.07 SITE SAFETY

- A. All trenching, excavations, shoring, etc., shall be performed in compliance with California Division of Occupational Safety and Health (OSHA) and local, State and/or Federal regulations. All work shall also comply with the requirements contained in these Specifications.
- B. Protection of Persons and Property: Barricade and cover all open excavations and post with warning lights, signs, barrier tape or a combination of such measures to warn workers and park patrons of unsafe conditions and protect them from harm. Open trenches shall, in all cases, be marked by a sufficient number of flashing lights and barriers during hours of darkness. Ensure that all open trenches are properly barricaded, covered, and flagged at the end of each working day before vacating the jobsite.
- C. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movements, undermining, washout, and other hazards created by earthwork operations.

1.08 EROSION CONTROL

- A. See Section 01570 – Temporary Controls for temporary erosion control requirements.

1.09 LAYOUT OF WORK AND SURVEYING

- A. Construction staking shall be per Section 01720 – Field Surveying.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Stockpiling: Stockpile materials on-site within grading area, staging area, designated fill sites, and at locations approved by the Owner.
- B. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials.

- C. Maintain toe of material at least 6 feet from edges of trenches and excavations. Pile so surface water is prevented from flowing into excavations. Provide free access to fire hydrants and access roadways.

PART 2 – PRODUCTS

2.01 SOIL MATERIALS

- A. Unsuitable materials not to be incorporated in the work:
 - 1. Organic matter such as peat, mulch, organic silt or sod.
 - 2. Expansive clays.
 - 3. Material containing excessive moisture.
 - 4. Poorly graded coarse material.
 - 5. Material with particle sizes greater than 4 inches.
 - 6. Material that will not achieve density and/or bearing requirements.
 - 7. Construction debris.
 - 8. Frozen material.
- B. Native Material
 - 1. Selected native soils excavated from the site may be utilized as backfill material for nonstructural embankments, structural fill, and general backfill areas with the approval of the Owner and meets the requirements under Import Materials.
 - 2. All uncontaminated materials deemed unsatisfactory for embankments or backfills will be disposed of offsite by the Contractor. Native material excavating and wasting shall be considered incidental to the bid price.
 - 3. The Owner retains the right to reject and have removed, at no additional cost, any/all excavated soil material placed as backfill material without the prior approval of the Owner for use of said soil in any particular application.
 - 4. All materials considered to be excavation debris shall be loaded and hauled from the site to a Contractor provided disposal site at no additional cost. Such debris shall include all roots, buried logs, and all other non-soil type debris exposed during earthwork operations.

2.02 IMPORT MATERIALS

- A. Trench Bedding and Initial Backfill: Use Type II and/or Pervious Material(s) only if called for on the Plans or the trench bottom is wet or shows evidence of having been wet, rocky, cobbled and when directed by the Engineer. Otherwise, Type I Material shall be used.
 - 1. Type I Material - Type I Material shall meet the requirements of Placer County Standard Specification 19-4.02. Excavated native material may not be used as Type I bedding material.
 - 2. Type II Material - The material used for Type II Material shall be ¾-inch washed drain rock (100% passing the ¾” screen) consisting of natural gravel, crushed gravel, or crushed rock, free from dirt, clay balls, roots, organic material, or other deleterious material.
- B. Trench Intermediate Backfill shall meet the requirements of Placer County Standard Specification 19-4.03.
- C. Geotextile Separation: If Type II Material is used for the Initial Backfill layer, then a layer of Geotextile Separation fabric shall be laid between the Initial and Intermediate Backfill layers:
 - 1. The Geotextile Separation fabric shall be a non-woven, needle-punched geotextile made of 100% polypropylene staple filaments with a minimum mass per unit area of 6 ounces/yard (ASTM D-5261).
 - 2. Acceptable Manufacturers; Products:
 - a. Propex Geosynthetics; Geotex® 651.
 - b. US Fabrics; US 160NW.
 - c. Or approved equal.

2.03 UTILITY WARNING TAPE

- A. Shall be APWA color-coded detectable underground marking tape. The width of the tape shall be as recommended by the manufacturer based on depth of installation. Tape shall be plastic-encased metallic foil tape capable of being located by a metal detector. Message and coding shall be per APWA Standards and shall be as follows:

Table 02315-1: Underground Marking Tape Message and Color Coding

Message	Color Coding
CAUTION: ELECTRIC LINE BURIED BELOW	Red
CAUTION: WATER LINE BURIED BELOW	Blue
CAUTION: SEWER LINE BURIED BELOW	Green
CAUTION: RECLAIMED WATER LINE BURIED BELOW	Purple
CAUTION: TELEPHONE LINE BURIED BELOW	Orange
CAUTION: CATV LINE BURIED BELOW	Orange

- B. Provide new continuous warning tape for each type of utility installed. Also provide new replacement warning tape for utilities encountered and replace any/all damaged sections of existing

warning tape for those utilities. Should no warning tape exist on encountered utilities, provide a section of new tape at the crossing.

2.04 LOCATOR WIRE

- A. Electrical wire used for locating a buried utility shall be solid or stranded copper, AWG 12. Insulation shall be Type USE Chemically Cross Linked Polyethylene or Type PF, and shall be listed by a Nationally Recognized Testing Laboratory. Each conductor shall be color coded per APWA Standards, as noted in Table 02315-1 above.
- B. Low voltage splices shall be made with direct bury splice kit using twist-on wire connector or split bolt connection, then be inserted in a waterproof polypropylene tube filled with a silicone electrical insulating gel or heat-shrinkable insulating tubing. Heat-shrinkable insulation tubing shall consist of a mastic-lined heavy-wall polyolefin cable sleeve.

2.05 WASTE MATERIALS

- A. Foreign materials, buried rubble, abandoned pipes, and native uncontaminated soil materials that cannot be processed to uniform moisture and texture necessary to meet material specifications and to achieve specified densities shall be disposed of by the Contractor at an appropriate waste site. Waste sites shall be provided by the Contractor.

PART 3 – EXECUTION

3.01 WORK SEQUENCE

- A. Verify that all work preliminary to this section has been performed in accordance with the plans and these specifications prior to beginning trench excavation and backfill operations.
- B. Notify Engineer of any discrepancies between contractual requirements and site conditions prior to start of Work.
- C. Plan and coordinate all construction to reduce sediment and subsequent pollution. The Contractor shall employ all means as may be required to ensure that silts and construction debris do not migrate from the construction site limits. Failure to halt the migration of construction debris, mud, silts, and related pollutants to outside of the construction limits, shall be cause for suspension of work until pollution control devices are remade, repaired, lengthened or strengthened as required to properly manage the site discharge.
- D. Maintain backfill subgrade zones or lifts open until approval of testing is secured from Engineer. Any work covered up prior to approval shall be excavated and reconstructed at Contractor's expense.
- E. Contractor shall provide all construction and subsequent removal of all shoring and cribs that may be necessary for protection of existing structures, excavation, removal, construction of structures, placement, and compaction of fill material.

3.02 EXCAVATION

- A. Perform all excavations of every description and of whatever substances encountered to the depths indicated on the Plans, including excavation required by the Engineer of compacted fill for the purpose of performing tests. Use open cut excavation methods unless otherwise shown on the Plans or approved by the Engineer.
- B. The Contractor shall utilize techniques which minimize grading, vegetation removal, and temporary and permanent disturbance. All areas disturbed as a result of the work shall be revegetated.
- C. Shrubs, trees, and other landscape vegetation shall be protected to the greatest extent possible to avoid damage or removal during excavation.
- D. Roots shall be exposed using a pneumatic or hydraulic spade tool, vacuum truck or similar device. Contractor shall not expose roots without having the time or materials to rebury the root within 48 hours. Tree roots less than 3" in diameter may be cut with shears in field. Pruning of roots greater than 3" diameter shall be approved by City.
- E. Maintain trench walls as vertical as possible except as required by safety standards and for that required for sheeting and shoring. Special construction methods may be required to ensure no damage to existing utilities or structures.
- F. Over-excavation.
 - 1. Unauthorized Over-excavation. Fill and compact excavation beyond the specified trench dimensions, at the contractor's expense, with adjacent trench bedding and or backfill materials.
 - 2. Rock. Excavate rock encountered in trench to provide a minimum of six (6) inches of bedding below the pipe and the width of the pipe at the springline.
- G. Unsuitable Material. Over-excavate unsuitable material to a depth determined by the Engineer to provide required uniform and stable support. In no case shall the over excavation be less than 18 inches. Backfill the over excavation with foundation material and compact.
- H. Trench Excavation and Backfill for Manholes, Valves and Other Appurtenances. Excavation, foundation, bedding and backfill requirements shall be the same as that specified for the adjacent trench and as detailed on the plans. I. Grading and Stockpiling.
 - 1. Grade in the vicinity of the trench to prevent surface water from flowing into the trench. Remove any water accumulated in the trench by pumping or by other approved methods. Stockpile excavated material in an orderly manner a sufficient distance back from the edges of the trench to avoid overloading and to prevent slides or cave-ins.
 - 2. Excavate topsoil and stockpile separately. Replace topsoil upon completion of backfill to the elevation and grade indicated on the Plans. Failure to stockpile topsoil separately will

result in the addition of soil amendments as required for revegetation at no additional expense to the Owner.

3. Material suitable for reuse on site shall be deposited in approved, protected, maintained piles separate from other materials and readily available. Upon completion, all material storage areas shall be restored to substantially their original condition. J. Shoring and Bracing shall be per Section 02255 – Shoring.

K. Open Trench

1. Maximum Length: The maximum length of the open trench in the aggregate at any one location is not to exceed 100 feet. The trench is considered open until fill is completed to adjacent finish grade elevation.
2. Trenches within local roadways: Complete backfill of trench in street right of way at the end of each workday. Apply temporary asphalt cold patch or steel plates at the end of each work day and maintain cold patch until final paving is complete. No trench shall be left open in any street right of way overnight.
3. Temporary Provisions: Furnish and install trench bracing and steel plating required to provide safe and convenient vehicular and pedestrian passage across trenches where required. Maintain access to emergency facilities at all times.

L. Sawcut, remove and dispose of existing pavements per Section 02740 – Flexible Pavement.

3.03 ROCK EXCAVATION

- A. The Contractor is hereby notified that bedrock and boulders may be encountered.
- B. When the Contractor encounters bedrock or a boulder that may be considered Rock Excavation, they shall immediately notify the Engineer's on-site representative and proceed to expose the unexcavatable materials to determine the limits of Rock Excavation.
- C. Upon agreement of the Engineer, the Contractor shall immediately proceed with Rock Excavation.
 1. The Contractor may utilize blasting, power-operated hammers or other such equipment as necessary to accomplish the Work. The decision as to which means and methods shall be the responsibility of the Contractor.
 2. Explosives and Blasting: Blasting will be permitted only upon written authorization from the Owner and associated agencies. The Contractor is responsible for obtaining any related permits.
 - a. If approved, blasting operations shall be carried out by persons duly licensed and insured to work with explosives and shall be in compliance with all applicable laws and ordinances.

- b. Blasting will be permitted only when proper precautions are taken for protection of persons, work, and existing structures.
 - c. The Contractor shall be responsible for any damage to persons, private property, the Work and/or existing structures.
 - d. The Contractor will be responsible for all permits required for blasting and shall furnish the Owner with current copies of Blaster's license and insurance.
 - 3. The use of expansive compounds or similar methods that have a time delay associated with their effectiveness shall be reviewed on a case-by-case basis and the Contractor shall not be entitled to compensation while waiting for such methods to become effective.
- D. The Contractor shall submit at the end of each day in which Rock Excavation is performed, a time and materials report substantiating the quantity of labor, materials, and equipment used in the performance of the Rock Excavation. The Report shall include, at a minimum, the date, location of work, progress, personnel names, equipment and material descriptions, and quantity of each. The Report shall be subject to the approval of the Engineer and will be the basis for approved Extra Work.
- E. Rock Excavation, as defined above in Article "Definitions", will be paid for per the unit cost submitted in the Bid Proposal.
 - 1. The Contractor will be compensated for equipment that is not involved in Rock Excavation but becomes idle as a result and cannot be used elsewhere.
 - 2. If the Contractor is not prepared to begin Rock Excavation within two (2) hours and the area of Rock Excavation is limited, then the Contractor shall proceed with excavation and utility installation beyond the limits of Rock Excavation. The Contractor will not be entitled to Extra Work compensation for labor, equipment, or materials idled more than two (2) hours because the Contractor elects not to "leapfrog" the Rock Excavation area.
 - a. If the Rock Excavation area is "leapfrogged", then the Contractor shall be entitled to Extra Work compensation for work related to reconnecting the utility line through the Rock Excavation area.

3.04 SPOIL AREA

- A. Dispose of any surplus uncontaminated material outside of the designated spoils area at no additional cost to the Owner. Disposal of surplus materials in the selected area shall meet all local codes and ordinances and comply with all permits. No spoils shall be left overnight in the project area. Clean up is required daily.

3.05 TRENCHES LOCATED IN FILL

- A. First, place fill and grade all areas to within one foot of finish grade prior to trenching and placement of pipeline.

3.06 FOUNDATION, BEDDING, BACKFILLING AND COMPACTION

- A. **Moisture Conditioning:** Moisture condition all bedding and backfill materials by aerating or wetting to achieve the moisture content required to obtain the minimum percent compaction. Mix until the moisture content is uniform throughout the material. In lieu of moisture conditioning native soils, import materials meeting all specifications may be used at no additional expense to the Owner. Import materials shall be moisture conditioned as required to achieve the required relative percent compaction. No additional payment will be made for moisture conditioning, import or native materials.
- B. **Compaction:**
1. **Compaction Methods:** Water consolidation, water jetting or rubber-tired tractor wheel rolling will not be allowed.
 2. Compaction densities shall be as noted on the Plans.
- C. **Bedding:**
1. Moisture condition, place, and compact bedding material to the bottom of the pipe elevation.
 2. Accurately grade the bottom of the trench to provide uniform bearing and support for each section of pipe at every point along its entire length.
- D. **Initial Backfill:** Hand compact initial backfill around pipe haunch with a hand compactor (J-bar) or a mechanical vibratory compactor sized to fit the narrow width between the trench wall and pipe. Give special attention to provide compaction effort in the important haunch zone.

3.07 BACKFILL FOR VALVES, MINOR STRUCTURES, AND OTHER APPURTENANCES

- A. Backfill appurtenances and structures as shown on the Plans. Where not clearly indicated, the backfill, including bedding, lift thickness and compaction, shall be identical to the adjacent trench detail.

3.08 BURIED WARNING AND IDENTIFICATION TAPE

- A. Place tape to depth indicated on the plan, centered over pipe.

3.09 GOUNDWATER CUTOFFS

- A. Where indicated on the Drawings or when groundwater is encountered within street right-of-ways, private traveled ways or parking areas to such a degree that water flows along the excavated trench, an impervious cutoff section shall be provided in the trench a short distance downstream from the source of the groundwater. If the groundwater is entering more or less continuously along its length within a given reach, more than one cutoff section will be required.

- B. Groundwater cutoff walls shall be placed as identified within the Drawings. Groundwater cutoff walls shall be located as nearly as practicable as the middle of a pipe length.
- C. The cutoff section shall consist of relatively impervious imported materials, approximately three feet long at the bottom placed at an interruption in the bedding and initial backfill material, and extending to the full height of the trench. This cutoff section shall be placed as nearly as practicable at the middle of a pipe length and shall be compacted in place by hand tamping to a density of ninety five percent (95%) or by mixture of imported material with soil cement and compaction to a density of ninety percent (90%). Compaction will be tested by ASTM D-1557 test procedure. Groundwater cutoffs shall be paid as extra work or in accordance with the bid documents.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: A qualified independent testing and inspecting agency shall perform field tests and inspections and to prepare test reports.
- B. Allow testing agency to test and inspect subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.11 PROTECTION AND DISPOSAL

- A. Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Where settling occurs before project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
- C. Disposal of Excess Suitable Material: Shall be hauled and deposited in areas as shown on the Plans or agreed upon with Owner. No direct payment shall apply.

END OF SECTION

SECTION 02565 - DUCTILE IRON PIPE

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide ductile iron pipe and all appurtenant work, complete in place, in accordance with the Development Agreement.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

ASTM A307	Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
ASTM A536	Ductile Iron Castings
ASTM C150	Portland Cement
AWWA C104	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water
AWWA C110	Ductile-Iron and Gray-Iron Fittings, 3-in. - 48 in., for Water
AWWA C111	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
AWWA C115	Flanged Ductile-Iron Pipe with Ductile Iron or Gray-Iron Threaded Flanges
AWWA C150	Thickness Design of Ductile-Iron Pipe
AWWA C151	Ductile-Iron Pipe, Centrifugally Cast, for Water
AWWA C153	Ductile-Iron Compact Fittings for Water Service
AWWA C219	Bolted, Sleeve-Type Couplings for Plain-End Pipe
AWWA C550	Protective Epoxy Interior Coatings for Valves and Hydrants
AWWA C600	Installation of Ductile Iron Water Mains and Their Appurtenances
AWWA C502	Fire Hydrants
AWWA C509	Gate Valves

1.3 Contractor Submittals

- A. The Contractor shall submit the following information:
 - 1. Catalog cuts of pipe, fittings, valves, hydrants and specials indicating the size, manufacturer, end joints, lining and coating and pressure rating.

2. Catalog cuts of pipeline marking tape indicating the size, color, manufacturer and material.
3. Catalog cuts of prefabricated riser assemblies indicating the size, material, manufacturer, end joints, lining and coating and pressure rating.

PART 2 – PRODUCTS

2.1 GENERAL

- A. Mortar-lined ductile iron pipe shall conform to AWWA C104 and C151, subject to the following supplemental requirements. The pipe shall be of the diameter and class shown in the Approved Drawings, shall be furnished complete with all necessary rubber gaskets, specials and fittings.
- B. Pipe materials shall conform to the requirements of AWWA C151.
- C. **Handling and Storage:** The pipe shall be handled by devices acceptable to the District, designed and constructed to prevent damage to the pipe coating/exterior. The use of equipment, which might injure the pipe coating/exterior, will not be permitted. Stockpiled pipe shall be suitably supported and shall be secured to prevent accidental rolling. All other pipe handling equipment and methods shall be acceptable to the District.
- D. **Laying Lengths:** Maximum pipe laying lengths shall be 20 feet with shorter lengths provided as required by the Drawings.
- E. **Closures and Correction Pieces:** Closures and correction pieces shall be provided as required so that closures may be made due to different headings in the pipe laying operation and so that correction may be made to adjust the pipe laying to conform to pipe stationing shown on the Drawings. The locations of correction pieces and closure assemblies shall be acceptable to the District.

2.2 FITTINGS AND SPECIALS

- A. Fittings for ductile iron pipe shall conform to the requirements of AWWA C153 or AWWA C110. Fittings shall have a minimum pressure rating of 250 psi. Flanged cast iron fittings with a pressure rating of 150 psi shall not be used. Fittings shall be either cement-mortar lined and asphalt coated as described in this Specification, or epoxy lined and coated in accordance with AWWA C550.
- B. The pressure rating of fittings shall be stamped or cast directly on the exterior of the fitting by the manufacturer. Any fittings where the pressure rating has not been so indicated shall be rejected by the DISTRICT and removed from the site.
- C. Restrained joints at fittings and specials shall be as described in Article 2.3 of this Specification.
- D. Specials shall be as specified herein and as indicated on the Approved Drawings.
 1. Sleeve couplings shall conform to the requirements of AWWA C219. Sleeve and end rings shall conform to ASTM A536 and shall be epoxy lined and coated in accordance with AWWA C550. Gaskets shall conform to AWWA C219. Sleeve

couplings shall have a pressure rating of no less than 250 psi and shall be clearly marked with the rated pressure. The following products are acceptable for sleeve couplings sized 2-inch to 12-inch:

- a. Romac Industries, Inc., Style 501
 - b. Smith-Blair, Product 441
 - c. Ford Meter Box Company, Inc., Style FC1
 - d. or approved equal.
2. Flanged coupling adapters shall conform to the requirements of AWWA C219. Flanged body and end rings shall conform to ASTM A536 and shall be epoxy lined and coated in accordance with AWWA C550. Gaskets shall conform to AWWA C219. CONTRACTOR shall be responsible for matching bolt patterns of flanged coupling adapter with connecting pipe or appurtenances. Flanged coupling adapters shall have a pressure rating of no less than 200 psi and shall be clearly marked with the rated pressure. The following products are acceptable for flanged coupling adapters sized 3-inch to 12-inch:
- a. Romac Industries, Inc., Style "FCA501"
 - b. Dresser, Style 227
 - c. Smith-Blair, Product 912
 - d. Or approved equal.

E. Nuts and Bolts:

1. Nuts and bolts for flanges and T-bolts for mechanical joint fittings shall be ASTM A307, Grade A or B carbon steel. Nuts and bolts shall be factory hot-dip galvanized, zinc-plated, epoxy-coated or fluoropolymer-coated. Bare carbon steel shall not be allowed. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing. The nuts shall be capable of developing the full strength of the bolts. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads.
2. For items that are packaged from the factory with bare carbon steel nuts and bolts, the factory provided items shall be replaced with nuts and bolts of equal or better strength that conform to the coating requirements of this Section. The application of coatings or paints in the field by brush or spray shall not be adequate to satisfy the requirements of this Section.

3. Uncoated nuts and bolts made of high-strength low-alloy steel conforming to the requirements of ASTM A242 or ASTM A588 shall be allowed provided that there is a grade marking applied to the item at the factory. In order to be acceptable, the DISTRICT must be able to confirm the type of steel by a simple visual inspection of an assembled joint. The application of a manufacturer's insignia alone shall not be acceptable.
 - A. Romac has submitted documentation to the DISTRICT confirming that uncoated bolting materials supplied with Romac products conform to the requirements of ASTM A242 or ASTM A588. Uncoated bolting materials included inside factory sealed packages from Romac shall be acceptable even though they do not include a grade marking.
 - A. The acceptance of uncoated and unmarked bolting materials shall apply to bolting materials supplied by Romac only. Uncoated bolting materials supplied with products by other manufacturers shall be subject to the full requirements of this Section.
4. The requirements for nuts and bolts given in this Article shall also apply to threaded rods, carriage bolts, studs and any similar items used to construct water system piping in a buried application.
5. In the event that the Contractor proposes to supply fastener materials that do not comply with the above requirements, the Contractor shall note this non-conformance in the Shop Drawing submittal. The District shall consider such submittals on a case-by-case basis.

2.3 JOINTS

- A. **Joint Design:** Ductile iron pipe and fittings shall be furnished with mechanical joints, push-on joints, flanged joints, and restrained joints, as required.
 1. Mechanical joints and push-on joints shall conform to AWWA C111.
 2. Flanged joints shall conform to AWWA C115.
 3. Restrained joints shall be made up using one of the following:
 - a. "Field-Lok" gaskets by U.S. Pipe
 - b. "Gripper" gaskets by Gripper Gasket Company
 - c. Wedge-type retainer glands – Sigma "One-Lok", EBAA "Megalug" or EBAA "Megaflange"
 - d. "One-Bolt" fittings by One Bolt Incorporated
 - e. "GripRing" Pipe Restraints by Romac Industries.

- f. Foster Adaptors by Infact Corporation
- g. EBAA Iron Series 1100 HD Restraints
- h. EBAA Iron Series 1700 Restraints
- i. MJ Field Lok Restraints by US Pipe
- j. Stargrip Series 3000 by Star Pipe Products

B. **Joint Restraint:** Joints at all fittings and valves shall be restrained. Wherever possible, the Contractor shall install full lengths of pipe (18 feet long minimum) on either side of fittings and valves. Straight runs of pipe on either side of a fitting shall be restrained by one of two methods.

1. The Contractor may pour concrete thrust blocks as indicated in the Construction Agreement.
2. The Contractor may restrain in-line pipe joints by the use of methods indicated in this Section.

A. For an elbow, the length of pipe in feet on each side of the elbow that the pipe joints must be restrained is shown on the drawings.

A. For a tee, the length of pipe in feet on the branch run that the pipe joints must be restrained is shown on the drawings. The pipe along the through run may be unrestrained, provided that another nearby fitting does not require restrained pipe.

A. For a dead end pipe run with either an end cap or plug, the table below gives the length of pipe in feet from the end cap or plug that the pipe joints must be restrained is shown on the drawings.

C. For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when properly installed.

D. **Flange Gaskets:**

1. For pipe 12" in diameter and smaller, gaskets for flanged joints shall be full-faced, 1/8-inch thick synthetic rubber conforming with AWWA C115. Gaskets shall be rated for long-term exterior above-grade installation by the manufacturer.
2. For pipe 14" in diameter and larger, gaskets for flanged joints shall be 1/8-inch thick synthetic rubber conforming with AWWA C115. Gaskets shall be either full face or ring gaskets with integral ribs. Flat ring gaskets shall not be acceptable. Gaskets shall be rated for long-term exterior above-grade installation by the manufacturer.

2.4 CEMENT-MORTAR LINING

- A. **Cement-Mortar Lining for Shop Application:** Interior surfaces of all ductile iron pipe, fittings, and specials shall be cleaned and lined in the shop with cement-mortar lining applied centrifugally in conformity with AWWA C104. During the lining operation and thereafter, the pipe shall be maintained in a round condition by suitable bracing or strutting. Every precaution shall be taken to prevent damage to the lining. If lining is damaged or found faulty at delivery site, the damaged or unsatisfactory portions shall be replaced with lining conforming to these Specifications.
- B. **Cement:** Cement for mortar lining shall be Type V, conforming to the requirements of AWWA C104. Cement shall not originate from kilns that burn metal-rich hazardous waste fuel, nor shall fly ash or pozzolan be used as a cement replacement.
- A. The minimum lining thickness shall be as follows:

<u>Nominal Pipe Diameter (in)</u>	<u>Minimum Lining Thickness (in)</u>
3-12	1/8
14-24	3/16

- A. **Protection of Pipe Lining/Interior:** All shop-applied cement mortar lining shall be given a seal coat of asphaltic material in conformance with AWWA C104.

2.5 EXTERIOR COATING

- A. **Exterior Coating of Buried Piping:** The exterior coating shall be an asphaltic coating approximately 1 mil thick.

2.6 PIPELINE MARKING TAPE

- A. Pipeline marking tape shall have a minimum thickness of 5 mils, and shall be impervious to alkalis, acids, chemicals and solvents. Tape shall have a 50-gauge solid aluminum foil core laminated between two layers of inert plastic film. Tape shall have a minimum width of three inches and a minimum tensile strength of 100 pounds per 3-inch wide strip.
- B. Pipeline marking tape shall be colored blue and shall bear a continuously printed message in permanent black letters. Lettering shall be 1-inch tall and shall read "CAUTION – WATER LINE BURIED BELOW".

2.7 PIPELINE LOCATOR WIRE

- A. Pipeline locator wire shall be No. 14 AWG solid copper wire with THWN insulation. Splice connectors shall be rated for wet location/direct burial installation. All splices shall be covered with heat-activated shrink-wrap tubing or heavy mastic tape to create a watertight connection.

2.8 THRUST AND ANCHOR BLOCKS

- A. Thrust and anchor blocks shall be constructed of Portland cement concrete as show on the project drawings. The minimum 28-day compressive strength shall be 3,000 psi (14

Mpa). Maximum aggregate size shall be 1-1/2 inch (37.5 mm) and maximum slump shall be 4 inches (10 mm). Air entrainment is not required.

2.9 GATE VALVES

- A. Gate valves larger than two inches (2") shall be modified wedge disc, resilient seat, NRS valves with O-ring seals, similar and equal to Mueller A-2370, and shall open when the stem is rotated counter-clockwise. Unless otherwise shown, valves shall have a two-inch (2") square operating nut. Valves shall conform to AWWA C-509. All valves shall be of the same manufacturer.
1. Valve bodies shall be cast iron ASTM A-126, Class B, with "push-on" joint ends whenever possible.
 2. Joint materials for flanged joints shall consist of full-face one-piece gaskets conforming to AWWA C-207. Bolts and nuts shall conform to AWWA C-207.
 3. All shaft bearings shall be of the self-lubricating, corrosion resistant, sleeve type.
 4. All valves shall be hydrostatic and leak tested according to AWWA C-504.
 5. Operator components shall withstand an input torque of three hundred foot-pounds (300 ft/lbs.) at extreme operator positions without damage, per AWWA C-505.
 6. Valves two inches (2") and smaller shall be wedge disc, non-rising stem, screwed, all bronze, similar and equal to Crane No. 438.
 7. Valve boxes shall be provided for all gate valves placed underground, and shall be similar and equal to Christy G5, with an eight-inch (8") PVC (SDR 35) pipe extension sleeve. Cover shall be marked "WATER."

2.10 FIRE HYDRANTS

- A. Fire hydrants shall conform to AWWA Standard No. C-502, latest revision, for dry-barrel fire hydrants. Hydrants shall be traffic model with a five-and-one-quarter inch (5-1/4") main valve opening, and shall be equipped with two two-and-one-half inch (2-1/2") hose outlets and one four-and-one-half inch (4-1/2") pumper outlet (National Standard Thread). A "Higbee Cut" shall be required on the first thread of all outlets. Shoe connection shall be six-inch (6") flanged restrained joint connection. Final paint coat shall be yellow. All hydrants shall be of the same manufacturer, latest production model, equal in all respects to Mueller Super Centurion 250.
- B. Provide anchorage for tees, plugs, caps, bends, and hydrants in accordance with NFPA 24.
- C. Gravel for drainage shall be washed three-quarters inch (3/4") crushed rock or graded river gravel free of organic matter, sand, loam, clay, and other small particles that restrict water flow through the gravel.

PART 3 -- EXECUTION

3.1 INSTALLATION OF PIPE

- A. **Handling and Storage:** All pipe, fittings and specials shall be carefully handled and protected against damage, impact shocks, and free fall. All pipe handling equipment shall be acceptable to the District. Pipe shall not be placed directly on rough ground but shall be supported in a manner that will protect the pipe against injury whenever stored at the trench site or elsewhere. No pipe shall be installed where the lining or coating show defects that may be harmful as determined by the District. Such damaged lining or coating shall be repaired, or a new undamaged pipe shall be furnished and installed.
- B. All pipe damaged prior to Unconditional Acceptance by the District shall be repaired or replaced by the Contractor. Methods of repair shall be subject to approval by the District.
- C. The Contractor shall inspect each pipe and fitting prior to installation to insure that there are no damaged portions of the pipe.
- D. Before placement of pipe in the trench, each pipe or fitting shall be thoroughly cleaned of any foreign substance, which may have collected thereon and shall be kept clean at all times thereafter. For this purpose, the openings of all pipes and fittings in the trench shall be closed during any interruption to the WORK.
- E. **Pipe Laying:** The pipe shall be installed in accordance with AWWA C600. Pipe shall be laid directly on the bedding material. Blocking shall not be permitted, and the bedding shall be such that it forms a continuous, solid bearing for the full length of the pipe. Excavations shall be made as needed to facilitate removal of handling devices after the pipe is laid. Bell holes shall be formed at the ends of the pipe to prevent point loading at the bells or couplings. Excavation shall be made as needed outside the normal trench section at field joints to permit adequate access to the joints for field connection operations and for application of coating on field joints.
- F. Where necessary to raise or lower the pipe due to unforeseen obstructions or other causes, the District may change the alignment and/or the grades. Such changes shall be made by the deflection of joints or by the use of additional fittings. However, in no case shall the deflection in the joint exceed the maximum deflection recommended by the pipe manufacturer.
- G. Except for short runs that may be permitted by the District, pipes shall be laid uphill on grades exceeding 10 percent. Pipe that is laid on a downhill grade shall be blocked and held in place until sufficient support is furnished by the following pipe to prevent movement. All bends shall be properly installed as shown.
- H. **Cold Weather Protection:** No pipe shall be installed upon a foundation into which frost has penetrated or at any time that there is a danger of the formation of ice or penetration of frost at the bottom of the excavation. No pipe shall be laid unless it can be established that the trench will be backfilled before the formation of ice and frost occurs.
- I. **Pipe and Specials Protection:**
 - b. Before placement of pipe in the trench, each pipe or fitting shall be thoroughly cleaned of any foreign substance, which may have collected thereon and shall be kept clean at all times thereafter. The openings of all pipe and specials shall be protected with suitable bulkheads to prevent unauthorized access by persons, animals, water or any undesirable substance.

- c. The Contractor shall utilize plugs, caps or similar devices manufactured specifically for the purpose of sealing pipe ends. The use of plywood, traffic cones or other items not specifically intended for this use shall not be allowed. These protective devices shall be installed during any interruption to the WORK.
- d. In the event that water, soil or other deleterious material enters the pipe, the Contractor shall take immediate steps to remove it. Such steps shall include sweeping, vacuuming, flushing, pigging or any other method necessary to clean the interior of the pipe to the satisfaction of the District.
- e. Trenches shall be kept free of water until joints have been properly made. The Contractor shall take all necessary precautions to prevent flotation of the pipe. Any pipe and fittings displaced by flotation shall be removed and reinstalled.

3.2 TRENCHING AND BACKFILL

- A. Trench excavation and backfill shall conform to the requirements of Section 02315 – Trenching and Backfill.

3.3 INSTALLATION OF MARKING TAPE AND LOCATOR WIRE

- A. Marking tape shall be installed as indicated on the Standard Details.
- B. Locator wire shall be installed as indicated on the Standard Details.
- C. Locator wire shall be terminated in valve and service boxes as indicated on the Standard Details.

3.4 CONNECTIONS TO EXISTING WATERLINES

- A. The Contractor shall locate all underground improvements and install the pipelines to the depths indicated. Where the new work is to be connected to existing pipelines, the Contractor shall make its arrangements with the District a minimum of 4 working days in advance of the connections, to allow adequate time for dewatering of the existing line, if necessary, and shall expedite the work to minimize any water outages.
- B. If, in the opinion of the District, the Contractor is not adequately prepared, does not have adequate manpower and equipment, or likely cannot complete the scheduled connection within the planned time, the District may postpone the scheduled connection until a later date when the Contractor can be properly prepared.

3.5 ASSEMBLY OF JOINTS WITH MECHANICAL DEVICES

- A. All joints with mechanical devices (EBAA Mega-lugs, Sigma One-Loks, Romac Grip-Rings, etc.) shall be assembled in accordance with the manufacturer's recommendations using equipment and tools as recommended by the manufacturer.
- B. The District has no objection to the use of impact sockets (either pneumatic or electric) provided that they are acceptable to the manufacturer. In the event that the Contractor utilizes impact sockets to assemble joints, the Contractor shall have on-site, an adjustable torque-indicating wrench to verify that the torque settings of the impact socket are correct. Impact sockets **SHALL NOT** be used to tighten the torque-limiting twist-off nuts that secure the wedges on wedge-type retainer glands (EBAA Mega-lugs or similar items).

3.6 THRUST BLOCKS

- A. Prior to placing thrust blocks, the Contractor shall wrap all bolts near the thrust block with protective plastic sheeting to prevent the bolts from being embedded within the concrete.

3.7 FIELD TESTING AND DISINFECTION

- A. Field testing and disinfection and water mains shall conform to the requirements of Section 02643 - Water Pipeline Testing and Disinfection.

- END OF SECTION -

SECTION 02597 - PVC PRESSURE PIPE

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The Contractor shall furnish polyvinyl chloride (PVC) pressure pipe, complete in place, in accordance with the Construction Agreement.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

ASTM D2000	Classification System for Rubber Products in Automotive Applications
ASTM D2584	Test Method for Ignition Loss of Cured Reinforced Resins
ASTM F477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
AWWA C605	Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C900	Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings, 4-inch Through 12-inch for Water Distribution
AWWA M23	PVC Pipe – Design and Installation
UniBell B-13	Recommended Standard Performance Specification for Joint Restraint Devices for Use with Polyvinyl Chloride (PVC) Pipe

1.3 CONTRACTOR SUBMITTALS

- A. The Contractor shall furnish submittals in accordance with Section 01330 – Contractor Submittals.
- B. The Contractor shall submit the following information:
 - 1. Catalog cuts of pipe, fittings and specials indicating the size, manufacturer, end joints, lining and coating and pressure rating.
 - 2. Catalog cuts of pipeline marking tape indicating the size, color, manufacturer and material.
 - 3. Catalog cuts of prefabricated riser assemblies indicating the size, material, manufacturer, end joints, lining and coating and pressure rating.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. PVC pressure pipe shall conform to the applicable requirements of AWWA C900 subject to additional requirements herein.

- B. Pipe shall be of the nominal diameter indicated in the Approved Drawings, with a DR-14 (200 psi) rating. Pipe shall be furnished complete with rubber gaskets and all other specials and fittings as required in the Contract Documents.
- C. **Handling and Storage:** The pipe shall be handled by devices acceptable to the District, designed and constructed to prevent damage to the pipe. The use of equipment which might injure the pipe will not be permitted. Stockpiled pipe shall be suitably supported and shall be secured to prevent accidental rolling. All other pipe handling equipment and methods shall be acceptable to the District.
- D. **Laying Lengths:** Maximum pipe laying lengths shall be 20 feet with shorter lengths provided as required.
- E. **Closures and Correction Pieces:** Closures and correction pieces shall be provided as required so that closures may be made due to different headings in the pipe laying operation and so that correction may be made to adjust the pipe laying to conform to pipe stationing shown on the Drawings. The locations of correction pieces and closure assemblies shall be acceptable to the District.

2.2 FITTINGS AND SPECIALS

- A. Fittings for PVC pipe shall be ductile iron and shall conform to the requirements of Section 02565 – Ductile Iron Pipe.
- B. Specials shall be as indicated in Section 02565 – Ductile Iron Pipe and as indicated on the Approved Drawings.

2.3 JOINTS

- A. **Joints:** Joints for the buried PVC pipe shall be an integral bell and spigot manufactured on the pipe.
- B. Joints at all fittings and valves shall be restrained. In addition, all joints located closer than 16 feet to a fitting or valve shall be restrained. Wherever possible, the Contractor shall install full lengths of pipe (18 feet long minimum) on either side of fittings and valves
- C. **Restrained Joints:** Where required, restrained joints shall be made up with either thrust blocks or mechanical devices. Mechanical devices shall comply with the requirements of UniBell B-13. Mechanical devices for joint restraint shall be one of the following:
 1. Wedge-type retainer glands - Sigma “One-Lok”, EBAA “Megalug” or EBAA “Megaflange”
 2. “One-Bolt” fittings by One Bolt Incorporated
 3. “GripRing” pipe restraints by Romac Industries
 4. Romac Series 600 pipe restraints
 5. EBAA Iron Series 1500 pipe restraint harnesses
 6. “PV-Lok” pipe restraints by Sigma

7. MJ Field Lok Restraints by US Pipe

8. Stargrip Series 4000 by Star Pipe Products

D. **Joint Restraint:** Joints at all fittings and valves shall be restrained. Wherever possible, the Contractor shall install full lengths of pipe (18 feet long minimum) on either side of fittings and valves. Straight runs of pipe on either side of a fitting shall be restrained by one of two methods.

- 1) The Contractor may pour concrete thrust blocks as indicated on the drawings.
- 2) The Contractor may restrain in-line pipe joints by the use of methods indicated in this Section.
 - a. For an elbow, the length of pipe in feet on each side of the elbow that the pipe joints must be restrained is shown on the drawings.
 - b. For a tee, the length of pipe in feet on the branch run that the pipe joints must be restrained is shown on the drawings. The pipe along the through run may be unrestrained, provided that another nearby fitting does not require restrained pipe.
 - c. For a dead end pipe run with either an end cap or plug, the table below gives the length of pipe in feet from the end cap or plug that the pipe joints must be restrained is shown on the drawings.

E. For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when proper

F. **Joint Deflection and Longitudinal Bending:** While installing PVC pipe, the Contractor may achieve minor offsets in through the use of longitudinal bending. PVC pipe joints shall not be deflected to achieve offsets. The table below gives parameters for allowable bending of PVC pipe.

Pipe Size	Minimum Radius of -- Curvature, feet	Maximum Offset for a Single Piece of Pipe, inches
4-inch	100	24
6-inch	144	17
8-inch	188	13
10-inch	232	10
12-inch	275	9

2.4 PIPELINE MARKING TAPE

A. Pipeline marking tape shall conform to the requirements of Section 02565 – Ductile Iron Pipe.

2.5 PIPELINE LOCATOR WIRE

- A. Pipeline locator wire shall conform to the requirements of Section 02565 – Ductile Iron Pipe.

2.6 THRUST AND ANCHOR BLOCKS

- A. Thrust and anchor blocks shall conform to the requirements of Section 02565 – Ductile Iron Pipe.

PART 3 -- EXECUTION

3.1 GENERAL

- A. Laying, jointing, testing for defects and for leakage shall be performed in the presence of the District, and shall be subject to approval before acceptance. Material found to have defects will be rejected and the Contractor shall promptly remove such defective materials from the Site.
- B. Installation shall conform to the requirements of AWWA M23, AWWA C605, instructions furnished by the pipe manufacturer, and to the supplementary requirements herein. Wherever the provisions of this Section and the aforementioned requirements are in conflict, the more stringent provision shall apply.

3.2 HANDLING AND STORAGE

- A. **Handling:** Pipe, fittings and accessories shall be carefully inspected before and after installation and those found defective shall be rejected. Pipe and fittings shall be free from fins and burrs. Before being placed in position, pipe, fittings, and accessories shall be cleaned, and shall be maintained in a clean condition. Proper facilities shall be provided for lowering sections of pipe and appurtenances into trenches. Under no circumstances shall pipe, fittings or any other material be dropped or dumped into trenches.
- B. **Storage:** Pipe shall be stored, if possible, at the Site in unit packages provided by the manufacturer. Caution shall be exercised to avoid compression damage or deformation to bell ends of the pipe. Pipe shall be stored in such a way as to prevent sagging or bending and be protected from exposure to direct sunlight by covering with an opaque material while permitting adequate air circulation above and around the pipe. Gaskets shall be stored in a cool, dark place out of the direct rays of the sun, preferably in original cartons.

3.3 TRENCHING AND BACKFILL

- A. Trench excavation and backfill shall conform to the requirements of Section 02315 – Trenching and Backfill.

3.4 INSTALLATION

- A. Bell-and-spigot pipe shall be laid with the bell end pointing in the direction of laying. On slopes of 10 percent or greater, laying shall begin at the bottom of the slope and proceed upward. Pipe trenches shall be graded in straight lines, taking care to avoid the formation of any dips or low points.
- B. Pipe shall not be laid when the conditions of trench or weather are unsuitable. Whenever pipe laying is discontinued, or at the end of each days work, open ends of pipe shall be closed temporarily with wood blocks or bulkheads. Blocks or bulkheads shall not be removed unless the trench is dry.
- C. The pipeline vertical alignment shall maintain a minimum depth to the top of pipe as noted in the Standard Details. The pipeline depth shall be increased as necessary to provide a minimum of 12-inches of vertical clearance between the top of the pipe and any underground structure or utility. The depth shall also be increased as directed by the District to allow the pipe to be installed without grade changes, to eliminate fittings, air release valves or blow-offs. Pipelines beneath other utilities shall be located so that the other utility is located as close as possible to the mid-point between pipe joints.
- D. Pipe shall be supported at its proper elevation and grade, care being taken to secure firm and uniform support. Wood support blocking will not be permitted. The full length of each section of pipe and fittings shall rest solidly on the pipe bed, with recessed excavation to accommodate bells, joints, and couplings. Anchors and supports shall be provided where indicated and where necessary for fastening work into place. Fittings shall be independently supported.
- E. Joints shall be installed according to manufacturer's recommendations. The maximum combined deflection at any joint shall be in accordance with the manufacturer's recommendations and these specifications, whichever is more restrictive. Pipe lengths shall be selected so that the pipe can be installed through horizontal or vertical curves, or any combination thereof, without exceeding the maximum allowable joint deflection.
- F. **Pipe and Specials Protection:**
 - a. Before placement of pipe in the trench, each pipe or fitting shall be thoroughly cleaned of any foreign substance, which may have collected thereon and shall be kept clean at all times thereafter. The openings of all pipe and specials shall be protected with suitable bulkheads to prevent unauthorized access by persons, animals, water or any undesirable substance.
 - b. The Contractor shall utilize plugs, caps or similar devices manufactured specifically for the purpose of sealing pipe ends. The use of plywood, traffic cones or other items not specifically intended for this use shall not be allowed. These protective devices shall be installed during any interruption to the WORK.
 - c. In the event that water, soil or other deleterious material enters the pipe, the Contractor shall take immediate steps to remove it. Such steps shall include sweeping, vacuuming, flushing, pigging or any other method necessary to clean the interior of the pipe to the satisfaction of the District.
 - d. Trenches shall be kept free of water until joints have been properly made. The Contractor shall take all necessary precautions to prevent flotation of the pipe. Any pipe and fittings displaced by flotation shall be removed and reinstalled.

- G. Pipe shall be cut by means of saws, power driven abrasive wheels, or pipe cutters, which will produce a square cut. No wedge-type roller cutters will be permitted. After cutting, the end of the pipe shall be beveled using a beveling tool, portable type sander, or abrasive disc.
- H. All pipe and fittings shall be properly restrained against horizontal and vertical movement due to internal pressure. Thrust blocks and anchor blocks shall be as indicated on the drawings. No loads shall be imposed on thrust blocks or anchor blocks until the concrete has reached a minimum compressive strength of 2,000 psi.

3.5 INSTALLATION OF MARKING TAPE AND LOCATOR WIRE

- A. Marking tape shall be installed as indicated on the drawings.
- B. Locator wire shall be installed as indicated on the drawings.
- C. Locator wire shall be terminated in valve and service boxes as indicated on the drawings.

3.6 CONNECTIONS TO EXISTING WATERLINES

- A. The Contractor shall locate all underground improvements and install the pipelines to the depths indicated. Where the new work is to be connected to existing pipelines, the Contractor shall make its arrangements with the District a minimum of 4 working days in advance of the connections, to allow adequate time for dewatering of the existing line, if necessary, and shall expedite the work to minimize any water outages. The Contractor shall notify all affected residents at least two working days in advance of any planned outage.
- B. If, in the opinion of the District, the Contractor is not adequately prepared, does not have adequate manpower and equipment, or likely cannot complete the scheduled connection within the planned time, the District may postpone the scheduled connection until a later date when the Contractor can be properly prepared.

3.7 ASSEMBLY OF JOINTS WITH MECHANICAL DEVICES

- A. All joints with mechanical devices (EBAA Mega-lugs, Sigma One-Loks, Romac Grip-Rings, etc.) shall be assembled in accordance with the manufacturer's recommendations using equipment and tools as recommended by the manufacturer.
- B. The District has no objection to the use of impact sockets (either pneumatic or electric) provided that they are acceptable to the manufacturer. In the event that the Contractor utilizes impact sockets to assemble joints, the Contractor shall have on-site, an adjustable torque-indicating wrench to verify that the torque settings of the impact socket are correct. Impact sockets **SHALL NOT** be used to tighten the torque-limiting twist-off nuts that secure the wedges on wedge-type retainer glands (EBAA Mega-lugs or similar items).

3.9 THRUST BLOCKS

- A. Prior to placing thrust blocks, the Contractor shall wrap all bolts near the thrust block with protective plastic sheeting to prevent the bolts from being embedded within the concrete.

3.10 FIELD TESTING AND DISINFECTION

- A. Field testing and disinfection and water mains shall conform to the requirements of Section 02643 - Water Pipeline Testing and Disinfection.

- END OF SECTION -

SECTION 02641 – WATER SERVICE CONNECTIONS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The Contractor shall provide water service connections for meters ¾-inch and smaller in accordance with the Construction Agreement.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

ANSI B16.15	Cast Bronze Threaded Fittings
ASTM A536	Ductile Iron Castings
ASTM B62	Composition Bronze or Ounce Metal Castings
AWWA C800	Underground Service Line Valves and Fittings
AWWA C901	Polyethylene (PE) Pressure Pipe and Tubing, 1/2" In. (13 mm) through 3 In. (76 mm) for Water Service

PART 2 -- PRODUCTS

2.1 SERVICE SADDLES

- A. Service saddles shall have ductile iron bodies conforming to ASTM A536 suitable for a working pressure of 300 psi. Saddles shall be double-strap and straps shall have a minimum width of 1.5 inches. All hardware, including straps, studs, nuts and washers shall be Type 304 stainless steel. Saddles shall be **Smith-Blair Model 317**, **Romac Model 202N**, or approved equal.
- B. For PVC pipe, saddles shall be sized such that the upper end of the OD range is equal to the outside diameter of the pipe. Acceptable part numbers are:

Pipe Size	1.5" Outlet Saddle	2" Outlet Saddle
4" PVC	Romac 202N - 4.80 x 1.5" IP or Smith Blair 317-048012-000	Romac 202N - 4.80 x 2" IP or Smith Blair 317-048014-000
6" PVC	Romac 202N – 6.90 x 1.5" IP or Smith Blair 317-069012-000	Romac 202N – 6.90 x 2" IP or Smith Blair 317-069014-000
8" PVC	Romac 202N – 9.05 x 1.5" IP or Smith Blair 317-090512-000	Romac 202N – 9.05 x 2" IP or Smith Blair 317-090514-000
10" PVC	Romac 202N – 11.10 x 1.5" IP or Smith Blair 317-111012-000	Romac 202N – 11.10 x 2" IP or Smith Blair 317-111014-000
12" PVC	Romac 202N – 13.20 x 1.5" IP or Smith Blair 317-132012-000	Romac 202N – 13.20 x 2" IP or Smith Blair 317-132014-000

2.2 POLYETHYLENE TUBING

- A. Polyethylene tubing for water service lines shall meet the requirements of AWWA C901

and be made from compounds having standard code designation PE 3408.

- B. The tubing shall be copper tube size (CTS) OD base with dimensions conforming to Table 7 of AWWA C901, Pressure Class 200 (DR9). PE tubing shall be Eagle 3408, Interstate PE3408, Performance Pipe 5100 Ultra-Line, Wesflex Gold Label 3408, or approved equal.
- C. Fittings for polyethylene tubing shall be brass compression type fittings and shall be as shown on the Approved Drawings. Stainless steel insert stiffeners shall be used at all compression joints. Insert stiffeners shall be flared at one end and beveled at approximately 45° at the other end. Stiffeners shall be supplied by the fitting manufacturer.

2.3 THREADED FITTINGS AND NIPPLES

- A. Threaded fittings and nipples shall be in accordance with ANSI B16.15. Fittings shall be designed for working pressures of 250 psi. Threads shall be tapered in compliance with AWWA C800.

2.4 CURB BALL VALVES

- A. Curb ball valves shall conform to AWWA C800. Curb ball valves shall be of brass alloy C83600 conforming to ASTM B62. Curb ball valves shall be designed for working pressures of 250 psi. End connections shall be female iron pipe thread by female iron pipe thread. Curb ball valves shall be:

Size	Curb Ball Valves
¾-inch	Ford No. B11-333-W Mueller B-20200-3 (¾")
1-inch	Ford Model B11-444-W Mueller B-20200-3 (1")
2-inch	Ford Model B11-777-W Mueller B-20200-3 (2")

No equals or substitutes will be accepted.

2.5 CORPORATION BALL VALVES

- A. Corporation ball valves shall conform to AWWA C800. Corporation ball valves shall be of brass alloy C83600 conforming to ASTM B62. Corporation ball valves shall be designed for working pressures of 250 psi. End connections shall be male iron pipe thread by compression. Stiffener inserts shall be used on the end of the polyethylene pipe at the compression end. Corporation ball valves and stiffener inserts shall be:

Size	Corporation Ball Valves	Stiffener Insert
1-inch	Ford Model FB-1100-4-Q Mueller B-25028 (1")	Ford Model Insert-52 Mueller Liner 528705
1.5-inch	Ford Model FB-1100-6-Q Mueller B-25028 (1.5")	Ford Model Insert-54-Q Mueller Liner 528706
2-inch	Ford Model FB-1100-7-Q Mueller B-25028 (2")	Ford Model Insert-55-Q Mueller Liner 528707

No equals or substitutes will be accepted.

2.6 COUPLINGS

- A. Couplings shall conform to AWWA C800. Couplings shall be of brass alloy C83600 conforming to ASTM B62. Couplings shall be designed for working pressures of 250 psi. Stiffener inserts shall be used on the end of the polyethylene pipe at the compression end.
- B. Male iron pipe x compression couplings and stiffener inserts shall be:

Size	MIP Coupling	Stiffener Insert
1-inch	Ford Model C84-44-Q Mueller H-15428 (1")	Ford Model Insert-52 Mueller Liner 528705
1.5-inch	Ford Model C84-66-Q Mueller H-15428 (1.5")	Ford Model Insert-54-Q Mueller Liner 528706
2-inch	Ford Model C84-77-Q Mueller H-15428 (2")	Ford Model Insert-55-Q Mueller Liner 528707

No equals or substitutes will be accepted.

- C. Female iron pipe x compression couplings and stiffener inserts shall be:

Size	FIP Coupling	Stiffener Insert
1-inch	Ford Model C14-44-Q Mueller H-15451 (1")	Ford Model Insert-52 Mueller Liner 528705
1.5-inch	Ford Model C14-66-Q Mueller H-15451 (1.5")	Ford Model Insert-54-Q Mueller Liner 528706
2-inch	Ford Model C14-77-Q Mueller H-15451 (2")	Ford Model Insert-55-Q Mueller Liner 528707

No equals or substitutes will be accepted.

2.7 SINGLE METER INSTALLATIONS WITH METERS 3/4-INCH AND SMALLER

- A. For single meter installations with meters 3/4-inch and smaller, boxes shall be Thermal-Coil model by Mueller. Meter boxes shall be designed to hold one meter and shall be equipped with 3/4-inch inlet and outlet polyethylene tubing. Meter boxes shall be nominal 15-inch diameter and 36 inches deep. Meter boxes shall be provided with 4-inch thick insulation pads and non-locking lids. Meter box components shall be as listed below:

Item	Part Number
15-inch diameter, 36-inch deep meter box	Mueller 250-CS-15-36-F-B-B-N
15-inch diameter, 4-inch thick insulation pad	Mueller 790022
15-inch diameter non-locking metal lid	Mueller 79007

No equals or substitutes will be accepted.

- B. For single meter installations located in paved areas, areas subject to vehicular loading, or where deemed necessary by the District, a precast concrete box rated for H-20 loading shall be provided and installed in lieu of the Thermal-Coil meter box. Such protective boxes shall be installed as indicated in the Drawings. Boxes shall have metal lids with bolting mechanisms to secure the lid and shall be furnished with bolts to secure the lid. Protective boxes shall be **Christy B2436 Box with B2436-62JH lid**. All lids shall be permanently marked with the term "WATER." Approved equals shall be accepted.

2.8 DOUBLE METER INSTALLATIONS WITH METERS ¾-INCH AND SMALLER

- A. **Mueller Thermal-Coil Boxes:** Double meter installations with meters ¾-inch and smaller with Mueller Thermal-Coil Boxes Meter boxes shall be designed to hold two meters and shall be equipped with 1-inch inlet and ¾-inch outlets for polyethylene tubing. Meter boxes shall be nominal 18-inch diameter and 36 inches deep. Meter boxes shall be provided with 4-inch thick insulation pads and non-locking lids. Meter box components shall be as listed below:

Item	Part Number
15-inch diameter, 36-inch deep meter box	Mueller 250-CD-18-36-F-B-B-N
15-inch diameter, 4-inch thick insulation pad	Mueller 790153
15-inch diameter non-locking metal lid	Mueller 790018

No equals or substitutes will be accepted.

If the location requires the installation of a single meter pit adjacent to an existing single meter pit the Contractor shall install a 1-1/2" x 1" x 1" Y connector (Ford No. Y-44-264-Q or Mueller No. H15343 (1" x 1-1/2")).

2.09 METERS

- A. Meters, meter couplings (where required) and meter adapters (where required) shall be furnished and installed by the District. The Contractor shall provide and install meter idlers in place of the meter when installing meter pits. The Contractor shall be responsible for performing all other work required by this specification section.

2.10 PIPELINE LOCATOR WIRE

- A. Pipeline locator wire shall conform to the requirements given in Section 02565 – Ductile Iron Pipe.

2.11 PIPELINE MARKING TAPE

- A. Pipeline marking tape shall conform to the requirements given in Section 02565 – Ductile Iron Pipe.

PART 3 -- INSTALLATION

3.1 GENERAL

- A. Excavation and backfill shall conform to the requirements of Section 02200 – Earthwork.
- B. Water service piping shall be tested in accordance with Section 02643 – Water Pipeline Testing and Disinfection.

3.2 SERVICE TAPS

- A. Direct tapping of water mains shall not be permitted. Double-strap service saddles shall be used for all service connections. Service saddles shall have a bearing area of sufficient width along the axis of the pipe, so that the pipe will not be distorted when the saddle is

made tight. An internal shell cutter shall be used to drill through the corporation stop to minimize shavings, retain the coupon, and reduce stress. Single fluted shell cutters or twist drills shall not be used. Cutting lubricant shall be used on the cutting and tapping edges of the tool.

3.3 SERVICE LATERALS

- A. All service laterals shall be a continuous piece of polyethylene tubing from the main to the meter box (or the "Y" in the case of double meter installations with Mueller Thermal-Coil Boxes). The CONTRACTOR shall not use couplings to splice together smaller pieces of tubing as a lateral installation.

3.4 ARRANGEMENT AND LABELING OF METER INSTALLATIONS

- A. For all single meter installations and double meter installations with Mueller Thermal-Coil Boxes, the CONTRACTOR shall mark the 5-digit number of the address served on the foam insulation pad using a black permanent marker. For double meter installations, boxes shall be arranged such that the box serving a given address is located closest to the centroid of that lot.

3.5 METER BOX LOCATING ROD

- A. In order to facilitate location of meter boxes during the Winter, the CONTRACTOR shall fasten a 12-inch long piece of #4 steel reinforcing bar to the exterior of the Thermal-Coil box with duct tape. The top of the reinforcing bar shall be about 1/2" below finished grade.

- END OF SECTION -

SECTION 02643 - WATER PIPELINE TESTING AND DISINFECTION

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The Contractor shall perform flushing, hydrostatic testing and disinfection of all pipelines and appurtenant piping, complete, in accordance with the Construction Agreement.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

AWWA B300 Hypochlorites

AWWA C651 Disinfecting Water Mains

1.3 CONTRACTOR SUBMITTALS

- A. The Contractor shall furnish submittals in accordance with Section 01330 – Contractor Submittals.
- B. The Contractor shall submit to the District a written **Testing and Disinfection Plan** that addresses the proposed steps and procedures to be utilized in pressure testing, flushing and disinfecting the new pipeline installation. The Plan shall be submitted a minimum of five working days prior to the planned commencement of the procedures. The plan should discuss both the proposed source of water for testing and flushing and the proposed disposal location of water from flushing. The plan shall comply with all appropriate regulations issued by the Sierra Lakes County Water District, Placer County, Donner Summit Public Utility District and the Central Valley RWQCB. The Contractor shall be responsible for obtaining all necessary permits for disposal of water and copies of those permits shall be included in the **Testing and Disinfection Plan**. The District shall review the Plan and inform the Contractor of any required changes to the proposed plan. Testing and disinfection shall not proceed and connections shall not be made to the existing water system without an approved **Testing and Disinfection Plan**.

PART 2 -- PRODUCTS

2.1 MATERIALS REQUIREMENTS

- A. All test equipment, chemicals for chlorination, temporary valves, bulkheads, or other water control equipment and materials shall be selected and furnished by the Contractor subject to the District's review.
- B. Chlorine for disinfection may be in the form of sodium hypochlorite solution, or calcium hypochlorite granules or tablets.
- C. Sodium hypochlorite and calcium hypochlorite shall be in accordance with the requirements of AWWA B300.

PART 3 -- EXECUTION

3.1 GENERAL

- A. Disinfection shall be accomplished by chlorination. All chlorinating and testing operations shall be performed in the presence of the District. Chlorination shall take place using either the Tablet Method or the Continuous Feed Method as outlined in AWWA C651. The Slug Method shall not be used.
- B. Disinfection operations shall be scheduled by the Contractor as late as possible during the Contract Time period so as to assure the maximum degree of sterility of the facilities at the time the WORK is accepted by the District.

3.2 PRESSURE TESTING, FLUSHING AND DISINFECTION PROCEDURE – CONTINUOUS FEED METHOD

- A. The following procedure shall be used for pressure testing and disinfection using the Continuous Feed Method:
 - 1. The Contractor shall submit and obtain approval of the written **Testing and Disinfection Plan** described above.
 - 2. Perform and complete hydrostatic testing of the pipeline as described in Article 3.4
 - 3. After successful completion of the hydrostatic pressure test, connect the new pipeline to the District's existing system using methods to be determined at one location. There must be an isolation valve at the point of interconnection.
 - 4. Flush the new pipelines at a velocity of at least 5 fps to remove any foreign matter or debris that may have accumulated during construction.
 - 5. Introduce a hypochlorite solution into the pipeline as described in Article 3.5.
 - 6. Measure and record the chlorine residual.
 - 7. Allow a minimum 24-hour period to ensure adequate retention of the highly chlorinated water within the pipeline. Measure the chlorine residual at the end of the 24 hours. If the chlorine residual is greater than, or equal to, 40 percent of the value recorded in Step 6, pipeline flushing may commence. If the chlorine residual is less than 40 percent of the value recorded in Step 6, introduce additional chlorine to raise the pipeline to a concentration of 25 mg/L and begin a new 24-hour retention period.
 - 8. Flush the highly chlorinated water from the pipeline to an approved disposal location. Flushing shall continue until the chlorine residual present in the pipeline is equal to that present in the District's system under normal operations. Measure and record the chlorine residual
 - 9. Wait 24 hours. Take a chlorine residual sample and compare to the previous sample taken 24-hours prior. If the chlorine residual has not dropped significantly, the District will take a water sample for bacteriological testing. Such samples may be taken from 8:00 AM to 2:00 PM on Monday through Thursday only. The sample will be delivered by the District to the local testing laboratory. If the chlorine level has

dropped significantly, the Contractor shall repeat Steps 8 & 9 until there is not a significant drop in the chlorine level.

10. Perform any remaining connections to the existing system.

3.3 PRESSURE TESTING, FLUSHING AND DISINFECTION PROCEDURE – TABLET METHOD

A. The following procedure shall be used for pressure testing and disinfection using the Tablet Method:

1. The Contractor shall submit and obtain approval of the written **Testing and Disinfection Plan** described above.
2. Perform and complete hydrostatic testing of the pipeline as described in Article 3.4
3. After successful completion of the hydrostatic pressure test, measure and record the chlorine residual. If the chlorine residual is greater than 25 mg/L, the 24-hour retention period may commence. If the chlorine residual is less than 25 mg/L, the CONTRACTOR shall introduce additional chlorine in the form of hypochlorite solution to raise the chlorine residual above 25 mg/L.
4. Allow a minimum 24-hour period to ensure adequate retention of the highly chlorinated water within the pipeline. Measure the chlorine residual at the end of the 24 hours. If the chlorine residual is greater than, or equal to, 40 percent of the value recorded in Step 3, pipeline flushing may commence. If the chlorine residual is less than 40 percent of the value recorded in Step 3, introduce additional chlorine to raise the pipeline to a concentration of 25 mg/L and begin a new 24-hour retention period..
5. Flush the highly chlorinated water from the pipeline to an approved disposal location. Flushing shall continue until the chlorine residual present in the pipeline is equal to that present in the District's system under normal operations. Measure and record the chlorine residual
6. Wait 24 hours. Take a chlorine residual sample and compare to the previous sample taken 24-hours prior. If the chlorine residual has not dropped significantly, the District will take a water sample for bacteriological testing. Such samples may be taken from 8:00 AM to 2:00 PM on Monday through Thursday only. The sample will be delivered by the District to the local testing laboratory. If the chlorine level has dropped significantly, the Contractor shall repeat Steps 5 & 6 until there is not a significant drop in the chlorine level.
7. Connect the new pipeline to the existing system at one location.
8. Flush the new pipelines at a velocity of at least 5 fps to remove any foreign matter or debris that may have accumulated during construction.
9. Perform any remaining connections to the existing system.

3.4 HYDROSTATIC TESTING OF PIPELINES

- A. The Contractor shall test the entire pipeline as a single unit. The test shall be made by placing temporary bulkheads or blind flanges in the pipe and filling the line slowly with water. The Contractor shall be responsible for ascertaining that all test bulkheads or blind flanges are suitably restrained to resist the thrust of the test pressure without damage to, or movement of, the adjacent pipe. The Contractor shall provide sufficient temporary air tappings in the pipelines to allow for evacuation of all entrapped air in each pipe segment to be tested. After completion of the tests, such taps shall be permanently plugged. Care shall be taken to see that all air vents are open during filling.
- B. The pipeline shall be filled at a rate that will not cause any surges or exceed the rate at which the air can be released through the air valves at a reasonable velocity and all the air within the pipeline shall be properly purged. During this period, bulkheads, valves, and connections shall be examined for leaks. If leaks are found, corrective measures satisfactory to the District shall be taken.
- C. The hydrostatic test shall consist of holding the test pressure on the pipeline for a minimum period of 2 hours. The test pressure shall be as determined by the District and shall be a minimum of 200 psi, measured at the highest point of the pipeline section being tested. All visible leaks shall be repaired in a manner acceptable to the District.
- D. The maximum allowable leakage for distribution and transmission pipelines shall be according to the following formula:

$$L = \frac{SD\sqrt{P}}{133,200}$$

where:

L = Allowable leakage (gallons per hour)

S = length (feet), the lesser of the actual length being tested or the maximum length for determining leakage. Maximum length for determining leakage is 2000 feet.

D = nominal pipe diameter (inches)

P = test pressure (psi)

- E. Pipelines that fail to pass the prescribed leakage test will be considered defective WORK, and the Contractor shall determine the cause of the leakage, shall take corrective measures necessary to repair the leaks, and shall retest the pipelines.
- F. In the event that it is necessary to depressurize the pipeline in order to repair a leak, any disinfection procedures performed to that point shall be considered compromised. Therefore, if the Contractor was proceeding with disinfection using the Tablet Method it will be necessary to chlorinate the pipeline after pressure testing using the continuous feed method since the highly chlorinated water would have been lost when the pipeline was depressurized.

3.5 DISINFECTING PIPELINES

- A. **Tablet Method:** Calcium hypochlorite tablets or granules shall be placed in the water main as it is being installed. The main shall then be filled with clean potable water. Calcium hypochlorite shall be placed in each section of pipe installed. The amount of calcium hypochlorite shall comply with Tables 1 and 2 of AWWA C651. The pipeline shall be filled at a rate of one foot per second or less to ensure that tablets are not

washed down the pipe as it is filled. Care shall be taken to prevent the strong chlorine solution in the pipeline being disinfected from flowing back into the line supplying the water.

- B. **Continuous Feed Method:** A chlorine-water solution shall be uniformly introduced into the pipeline by means of a solution-feed chlorinating device. The chlorine solution shall be introduced at one end of the pipeline through a tap in such a manner that as the pipeline is filled with water, the concentration in the water entering the pipe is at least 25 mg/L. Appropriate backflow devices shall be used to prevent the strong chlorine solution in the pipeline being disinfected from flowing back into the line supplying the water.
- C. **Valve Operation:** During the process of chlorinating the pipelines, all line valves and other appurtenances shall be operated while the pipeline is filled with the heavily-chlorinated water.

3.6 CONNECTIONS TO EXISTING SYSTEM

- A. Where connections are to be made to an existing potable water system, the interior surfaces of all pipe and fittings used in making the connections shall be swabbed or sprayed with a one percent hypochlorite solution before they are installed. Thorough flushing shall be started as soon as the connection is completed and shall be continued until discolored water is eliminated.

3.7 WATER SOURCES

- A. As noted above, the written ***Testing and Disinfection Plan*** shall identify the planned water sources to be used for pressure testing and disinfection procedures. The Contractor is hereby notified that the use of non-potable water trucks as water sources is strongly discouraged. The Contractor is responsible to complete the disinfection procedures to the District's satisfaction. Any irregularities that arise during the course of pressure testing and disinfection procedures provide sufficient cause for the District to require corrective measures and/or additional testing.

- END OF SECTION -

SECTION 02740
FLEXIBLE PAVEMENT

PART 1 – GENERAL

1.01 SUMMARY

- A. Work includes all labor, materials, equipment, and services necessary for supply and placement of asphalt concrete pavement.
- B. Related Sections
 - 1. Section 01330 – Submittal Procedures
 - 2. Section 02315 – Excavation and Backfill

1.02 STANDARDS

- A. General Specifications: Placer County Department of Public Works General Specifications, latest edition.
- B. Standard Specifications: California Department of Transportation (Caltrans), Standard Specifications, latest edition, excluding measurement and payment.

1.03 SUBMITTALS

- A. Submittals shall be per Section 01330 – Submittal Procedures.
- B. Report from a testing laboratory verifying that aggregate material and asphalt binder conform to the specified gradations or characteristics.

PART 2 – PRODUCTS

2.01 BASE COURSES

- A. Where shown on Contract Drawings to be used, aggregate base shall be Class 2 aggregate base, 3/4-inch maximum grade, per Section 26 of the Placer County General Specifications, and the General Resurfacing Detail Plates.
- B. Where base thickness exceeds 6 inches in depth, the depth below 6 inches may be Class 2 aggregate, 1-1/2-inch maximum grading. Aggregate base shall contain no detectable asbestos, or recycled materials such as waste concrete or recycled asphalt concrete.

2.02 PLANTMIX AGGREGATE

- A. Aggregate shall be Type A, 1/2-inch, maximum, medium graded per Section 39-2.02 of the Standard Specifications. Aggregate shall be clean and free from decomposed materials, organic material and other deleterious substances and shall contain no detectable asbestos.

2.03 ASPHALT CEMENT PAVEMENT

- A. Unless noted otherwise on the Contract Drawings, asphalt concrete shall conform to Section 39 of the Standard Specifications and shall have a Type A, 1/2-inch, maximum, medium graded aggregate with a PBA Grade 6B or PG 64-28 asphalt binder (Section 92).

2.04 ASPHALT BINDER

- A. Asphalt binder to be mixed with aggregate shall be a steam-refined paving asphalt conforming to Sections 39 and 92 of the Standard Specifications, and shall be PBA Grade 6B or PG64-28, per Section 92.

2.05 PRIME COAT

- A. All areas to be paved shall receive prime coat, in accordance with Section 39-4 of the Standard Specifications. Prime coat shall be MC-70 liquid asphalt conforming to Section 93 of the Standard Specifications.

2.06 TACK COAT

- A. Unless noted otherwise on the Contract Drawings, tack coat shall be paving asphalt, PBA Grade 6B or PG 64-28 to match the grade of asphalt binder that is used, and shall conform to Sections 39-4.02 and 92 of the Standard Specifications.

2.07 HERBICIDE OR WEED KILLER

- A. Oxy-monobar chlorate, Occidental; Pramitol 3OWP, CIBA-Geigy; or approved equivalent.

2.08 PAINT FOR TRAFFIC STRIPING AND MARKING

- A. Replace all pavement and markings removed or damaged as a result of the Work activities. Replacement shall be the same as the original marking in configuration, layout, and quality (paint for paint, tape for tape, etc.), unless otherwise required by the individual agency encroachment permits.

2.09 GEOTEXTILE FABRIC

- A. Mirafi 180N or approved equivalent.

PART 3 – EXECUTION

3.01 PAVEMENT REMOVAL

- A. Initially cut asphalt concrete pavement with pneumatic pavement cutter or other equipment at the limits of the excavation and remove the pavement. After backfilling the excavation, saw cut asphalt concrete pavement to the full depth of pavement at a point not less than 9 inches outside the limits of the excavation or the previous pavement cut, whichever is greater, and remove the additional pavement.

- B. Saw cut concrete pavement, including cross gutters, curbs and gutters, sidewalks, and driveways, to the full depth of pavement at a point 1 foot beyond the edge of the excavation and remove the pavement.
- C. The concrete pavement may initially be cut at the limits of the excavation by other methods prior to removal and the saw cut made after backfilling the excavation. If the saw cut falls within 2 feet of a concrete joint or pavement edge, remove the concrete to the joint or edge. D. Make arrangements for and dispose of the removed pavement.
- E. Final pavement saw cuts shall be straight along both sides of trenches, parallel to the pipeline alignment, and provide clean, solid, vertical faces free from loose material. Saw cut and remove damaged or disturbed adjoining pavement. Saw cuts shall be parallel or perpendicular to the pipeline alignment or the roadway centerline, unless otherwise shown on Contract Documents.

3.02 SUBGRADE PREPARATION

- A. Place and compact specified aggregate base under all areas to receive asphalt cement to the depths, lines, and grades specified on the Drawings and as required to match existing roadway construction.

3.03 PROOF ROLLING

- A. Proof roll the prepared base material surface to check for unstable areas. Proof rolling shall be accomplished using a water truck or similar equipment with a rear axle load of at least 18,000 pounds with tires inflated to at least 65 psi. Paving work shall begin only after areas have been corrected and are ready to receive paving. The Engineer must be present during proof rolling.

3.04 PLACING AGGREGATE BASE COURSE

- A. Place aggregate base course to a minimum thickness as specified for the roadway. Compact to 95% relative compaction. Install in accordance with the Standard Specifications.

3.05 COMPACTION OF AGGREGATE BASE AND LEVELING COURSES

- A. Compaction and rolling shall begin at the outer edges of the surfacing and continue toward the center. Apply water uniformly throughout the material to provide moisture for obtaining the specified compaction. Compact each layer to the specified relative compaction before placing the next layer.

3.06 PLACING TACK COAT

- A. Apply tack coat to metal or concrete surfaces that will be in contact with the asphalt concrete paving. Apply tack coat on surfaces to receive finish pavement per the Standard Specifications.

3.07 PLACING ASPHALT CEMENT

- A. Place asphalt within 24 hours of applying primer and tack coat in accordance with the Standard Specification requirements.

- B. Asphalt shall be placed in acceptable weather and temperature conditions in accordance with the Standard Specification requirements.
- C. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- D. Develop rolling with consecutive passes to achieve an even and smooth finish, without roller marks. Finish grade of asphalt patches shall match existing adjacent pavement exactly, without bumps, depressions, or other irregularities. E. After pavement is in place, seal all joints.

3.08 SURFACE TOLERANCE

- A. Finished grades shall not deviate more than 0.03 inches in 12 feet in elevation parallel with the road centerline and 0.03 inches in 12 feet in elevation transverse to the centerline from the grades indicated in the drawings.
- B. Finished grade shall not deviate more than 0.02 foot in elevation from the grade indicated in the Contract Drawings. Slopes shall not vary more than 1/4 inch in 10 feet from the slopes shown in the Contract Drawings.
- C. After paving has been installed and compacted, spray water over the entire paved area. Correct any areas where water collects and does not drain away.

3.09 TRAFFIC STRIPING AND MARKING

- A. Apply markings to match any removed in the course of the project and in accordance with the Standard Specification requirements.

3.10 INSPECTION, TESTING, AND ACCEPTANCE

- A. The Engineer will inspect all hot mix asphalt patching work. Asphalt paving that exhibits incorrect grades, excessive unevenness, depressions, humps, or joint misalignments will be rejected by the Engineer and shall be completely replaced with new pavement at no additional cost to the Owner.

3.11 PROTECTION

- A. Immediately after placement, protect pavement from mechanical injury for a minimum of 2 days.

3.12 TEMPORARY TRENCH PATCHES COUNTY RIGHT OF WAY

- A. The contractor shall install a temporary patch at the end of each workday for opened portions of roadway. Patch shall be 3 inch temporary AC patch unless other materials are approved by Owner. Approved materials for temporary patch in right of way include hot mix asphalt, cold mix asphalt or compacted aggregate base.
- B. Contractor shall maintain temporary patch until the permanent asphalt patch is placed.

- C. All temporary patches (regardless of material) shall be replaced with a permanent asphalt patch within two weeks of installation.

END OF SECTION

Appendix A
Geotechnical Report

GEOTECHNICAL INFORMATION

A site specific geotechnical investigation was not completed for this project. A 2008 report prepared for the Owner for a previous project in the vicinity is included in Appendix A. The information in the report is provided as a resource to understand general subsurface conditions in the area.

Contractor should expect to find similar conditions as those described in the report. Groundwater should be expected to be encountered at shallow depths especially near lakes and streams. When near lakes and streams the groundwater elevation is expected to nearly match the elevation of the stream or lake. Excavations, especially in groundwater will be prone to caving.

The current project area is located in an area designated as Quaternary alluvium which will typically be excavatable with typical equipment to depths of 5 to 10 feet. However, near surface cobbles, boulders, or potentially bedrock should be expected to be encountered, especially in excavations deeper than 5 feet or in portions of the project near rock outcrops.

GEOTECHNICAL ENGINEERING REPORT
for
SIERRA LAKES 2008 CAPITAL IMPROVEMENT
PROJECTS
Serene Lakes/Placer County, California

Prepared for:
Sierra Lakes County Water District
P.O. Box 1039
Soda Springs, California

Prepared by:
Holdrege & Kull
10775 Pioneer Trail Suite 213
Truckee, California 96161

Project No. 41146-01
June 12, 2008



HOLDREGE & KULL

CONSULTING ENGINEERS • GEOLOGISTS

Project No. 41146-01
June 12, 2008

Sierra Lakes County Water District
P.O. Box 1039
Soda Springs, California 95728-1039

Attention: Bill Quesnel

Reference: *Sierra Lakes 2008 Capital Improvement Projects*
Serene Lakes/Placer County, California

Subject: *Geotechnical Engineering Report*

Mr. Quesnel:

This report presents the results of our geotechnical engineering investigation for the Sierra Lakes 2008 Capital Improvement Projects located in Serene Lakes/Placer County, California. The proposed project will involve replacement of approximately 2,650 lineal feet of water mains, approximately 30 water service laterals on a separate section of waterline, and approximately 1,125 lineal feet of sanitary sewer line within an existing residential community.

Groundwater seepage was encountered in 7 of the 9 test pits excavated during this investigation at depths ranging from approximately 8 inches to 5 feet below the existing ground surface. Due to the presence of shallow groundwater seepage, site soil is over optimum moisture content and will likely require processing (i.e., uniformly moisture conditioned or "drying out") and screening to prior to use as backfill material. Dewatering of utility trenches will likely be required and may involve steady pumping, the use of a Banker tank for temporary storage, and/or trench cut off walls to control water volume and flow.

We anticipate that near-surface soil within most of the project area can be excavated to depths of approximately 5 to 10 feet below existing site grade using conventional earthwork equipment. It is likely that excavations along the southern and central portions of the project area (Palisade Road, Allen Drive and Bales Road) will cave and encounter shallow groundwater. Boulders and cobbles should be anticipated in excavations along the western portion of the project area. Excavations which extend into volcanic rock (north end of Soda Springs Road and east end of Pahatsi Road) are anticipated to be difficult and may require heavy equipment such as a large track-

mounted excavator equipped with a ripper tooth or hydraulic hammer. A "thumb" attachment may increase the ease of boulder removal at the site. In areas where moderately strong near-surface rock is encountered, spot blasting may be required.

With the exception of the aforementioned issues, our professional opinion is that the site is suitable for the proposed utility improvements using conventional earthwork grading and construction techniques. Specific recommendations regarding the geotechnical aspects of project design and construction are presented in the following report.

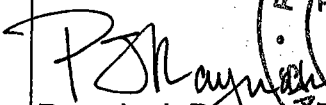
The findings presented in this report are based on our subsurface exploration, engineering analysis, and experience in the project area. Selected soil samples collected during our investigation were submitted to our laboratory for testing at the time we prepared this report; the results of which will be submitted under separate cover. We recommend retaining our firm to provide construction monitoring services during earthwork and foundation excavation to observe subsurface conditions encountered with respect to our recommendations provided in this report. As plans develop, we should be consulted concerning the need for additional services.

We appreciate the opportunity of providing our services for this project and look forward to providing further assistance once development plans have been finalized. Please contact us if you should have any questions regarding this report or if we can be of additional service.

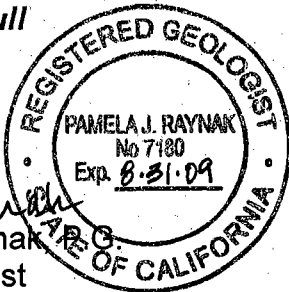
Sincerely,

Holdrege & Kull

Prepared By:



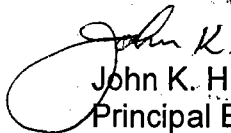
Pamela J. Raynak
Project Geologist



Reviewed:

No. C 050923

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John K. Hudson
Principal Engineer

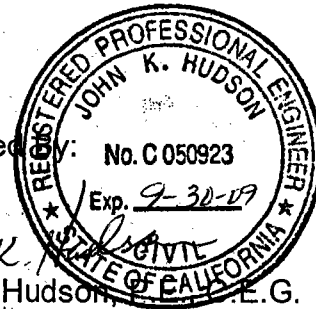


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FIGURES

Figure 1	Site Vicinity Map
Figure 2	Test Pit Location Plan
Figure 3	Project Geology

APPENDICES

Appendix A	Proposal
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1 INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the proposed Sierra Lakes 2008 Capital Improvement Projects located in Serene Lakes/Placer County, California. We performed our investigation in general accordance with our April 30, 2008 proposal for the project. A copy of the proposal is included as Appendix A of this report. For your review, Appendix B contains a document prepared by ASFE entitled *Important Information About Your Geotechnical Engineering Report*. This document summarizes the general limitations, responsibilities, and use of geotechnical engineering reports.

1.1 Purpose

The purpose of our investigation was to explore and evaluate the subsurface conditions at the project site, and to provide our geotechnical engineering recommendations for project design and construction.

Our findings are based on our subsurface exploration and our experience in the project area. We recommend retaining our firm to provide construction monitoring services during construction to observe subsurface conditions encountered with respect to our recommendations.

1.2 Scope of Services

To prepare this report we performed the following scope of services:

- We performed a site reconnaissance, literature review, and provided oversight during a subsurface exploration program that involved backhoe-excavated and vactor truck advanced test pits.
- We logged the subsurface conditions encountered and collected bulk soil samples for classification and laboratory testing.
- We performed laboratory tests on selected soil samples obtained during our subsurface investigation to evaluate material properties, the findings of which will be submitted under separate cover.
- Based on our subsurface exploration, we performed engineering analyses to develop geotechnical engineering recommendations for project design and construction.

1.3 Site Description

The project site consists of a developed residential community within the Serene Lakes area of the Sierra Nevada Mountain Range. The approximate location of the project area is shown on Figure 1, Site Vicinity Map. A plan view of the proposed project is shown on Figure 2, Test Pit Location Plan.

According to the 1992 edition of the Norden and Soda Springs, California, 7.5-minute quadrangle maps published by the United States Geological Survey (USGS); the subject site comprises a portion of Sections 26, 27, 34 and 35, Township 17 N., and Range 14 E. Site elevations range from approximately 6,960 feet above mean sea level (MSL) near the north and west portions of the site, to approximately 6,872 feet MSL near the southern area of the site in the vicinity of Ice Lakes. The site generally slopes gently to moderately down from northeast to southwest and northwest to southeast towards Ice Lakes.

1.4 Proposed Improvements

Information about the proposed project was obtained from our site visit and conversations with Mr. Bill Quesnel of Acumen Engineering Company (AEC). We understand that the proposed project will involve the replacement of approximately 2,650 lineal feet of water main, replacing about 30 water services and laterals on a separate section of waterline, and replacement of approximately 1,125 lineal feet of sanitary sewer line within an existing residential community. Water line main and laterals will be replaced beneath Palisade and Pahatsi Roads and the sewer main will be replaced beneath Hemlock Drive. In addition, water laterals will also be replaced beneath the northern part of Soda Springs Road, Allen Drive, and Bales Road. Access to the project area is provided along Soda Springs Road. We anticipate that excavation depths for the sewer main will be on the order of 8 to 10 feet deep. Cuts for the water main and laterals will be on the order of 5 to 6 feet. We understand that the SLCWD would like to reuse excavated materials for engineered backfill, if possible.

2. LITERATURE REVIEW

Our investigation included literature review and field exploration as described below.

2.1 Site Geology

We reviewed the *Geologic Map of the Chico Quadrangle, California*, by G.J. Saucedo and D.L. Wagner (California Division of Mines and Geology, 1992). In addition, we also reviewed the Geologic Map of Placer County, California, compiled by Ralph C. Loyd

(California Division of Mines and Geology, 1995). These geologic maps differ in scale and detail, but generally agree that the site is underlain by three different geologic units, as described below.

The geologic maps indicate that most of the western portion of the project area are underlain by glacial till deposits of Quaternary age (less than 1.6 million years before present). The southeast portion of the site, including most of Ice Lakes is mapped as being underlain by alluvial deposits of Quaternary age. The northern corner of the site is mapped as being underlain by volcanic rocks of Miocene age (approximately 23.7 to 5.3 million years before present). The alluvial deposits are described as consisting of unconsolidated silt, sand and gravel. The glacial till deposits are described as consisting of a mixture of silt, sand, gravel, cobbles, and boulders. The Miocene volcanic rock deposits are described as consisting of a mixture of rhyolite ash, welded and non-welded tuff, and volcanic-derived sandstone, siltstone, claystone, and conglomerate deposits.

Based on a field reconnaissance performed by our project geologist, we generally concur with the geologic conditions presented in published literature at the site in that three different geologic units exist at the site (alluvium, glacial till, and near-surface volcanic rock). The geology of the project area is shown on Figure 3, Project Geology.

2.2 Regional Faulting

The project is located in a potentially active seismic area. To evaluate the location of mapped faults relative to the project site, we reviewed the following maps:

- *Fault Activity Map of California and Adjacent Areas*; by Charles W. Jennings, California Department of Conservation, Division of Mines and Geology, 1994.
- *Geologic Map of the Chico Quadrangle, California*, by G.J. Saucedo and D.L. Wagner, California Division of Mines and Geology, 1992.

The potential hazard associated with earthquake faults involves surface rupture and strong ground motion. No faults are mapped as crossing or trending towards the site; therefore, the potential for surface rupture at the site is considered low. Earthquakes centered on regional faults in the area, would likely result in higher ground motion at the site than earthquakes centered on smaller faults that are mapped closer to the site.

3. SUBSURFACE INVESTIGATION

We performed our subsurface exploration to characterize typical subsurface conditions at the site.

3.1 Field Exploration

The subsurface conditions at the site were investigated by excavating nine exploratory test pits on June 2 and 3, 2008. The test pits were excavated by the Sierra Lakes County Water District (SLCWD) on June 2, 2008, with a John Deere 310C rubber tire backhoe equipped with a 24-inch bucket. On June 3, 2008, the SLCWD contracted with the Truckee Sanitary District (TSD) to remove groundwater and expose subsurface conditions within each test pit with a Vactor 2100 Series vacuum truck. The test pits were excavated to depths of approximately 2.5 to 7 feet below the existing ground surface (bgs) and were located based on proposed improvements and site access.

On June 3, 2008, a geologist from our firm logged the soil conditions exposed in the test pits, visually classified soil, and collected bulk soil samples for laboratory testing. Soil samples were packaged and sealed in the field to reduce moisture loss and were returned to our laboratory for testing. Upon completion, the test pits were backfilled with the excavated soil. The approximate location of our test pits is shown on Figure 2, Test Pit Location Plan.

The test pits excavated during this investigation were located in roadway shoulders; therefore, we did not observe pavement sections during this investigation.

3.2 Subsurface Soil Conditions

Based on the results of our subsurface investigation, three different geologic units are present beneath the site and consist of alluvium, glacial till, and near-surface volcanic rock. Alluvium was encountered in Test Pits TP-8 and TP-9 (Allen Drive and Bales Road) and consists of loose, wet layers of silt and sand that are potentially prone to caving. Glacial till deposits were encountered in Test Pits TP-2, TP-5 and TP-7 (central portion of Pahatsi Road and central portions of Soda Springs Road) and generally consist of medium dense to dense, moist to wet, silty sand with gravel and silty sand with varying amounts of cobbles and boulders. We encountered refusal at a depth of approximately 5 feet below the ground surface (bgs) in Test Pit TP-7. Numerous boulders were present along the ground surface in the area of TP-7 and the excavation likely encountered refusal on a boulder.

Near-surface volcanic rock was encountered in Test Pits TP-1, TP-3, TP-4, and TP-6 and varied from resistant rhyolite volcanic rock to loose/soft and medium dense/stiff interbedded volcanic ash layers (silty sand to sandy silt). The rhyolite was exposed in Test Pits TP-1 and TP-6, located in the northern portions of the project area that was slightly weathered, closely to moderately fractured, and moderately strong to strong. We encountered refusal on volcanic rock at a depth of approximately 2.5 feet bgs in Test Pit TP-6. Interbedded ash layers were exposed in Test Pits TP-3 and TP-4

(Palisades Road) that were soft to medium stiff, and moist to saturated; caving of sidewalls was observed in both test pits. More detailed descriptions of the subsurface conditions observed are presented in our Test Pit Logs in Appendix C.

3.3 Groundwater

We encountered free groundwater during our subsurface investigation at depths ranging from approximately 8 inches to 5 feet bgs. Fluctuations in soil moisture content and groundwater levels should be anticipated depending on site grades, the time of year, rainfall, irrigation practices, and other factors.

Depending on the depth of excavation, rainfall, irrigation practices, and other factors, perched groundwater above onsite bedrock and/or less permeable soil layers could effect construction. Perched groundwater may increase trench wall instability, necessitate trench dewatering, and other adverse conditions. We anticipate that pumping and filtering prior to discharge, or temporarily storing groundwater (such as a Baker tank) may be required for excavations in the southern (Allen and Hemlock Drives and Bales Road) and central (Palisade Road) portions of the project area.

3.4 Anticipated Excavation Conditions

We anticipate that that some areas of near surface rock may be encountered during excavations for the proposed waterlines in the northern portion of the project area. A large track-mounted excavator equipped with a ripper tooth or hydraulic hammer, or spot blasting may be required in these areas. Confined excavations for under ground utilities that extend into rock will likely be difficult. Boulders and over-sized material should be anticipated in on site excavations within the western portion of the project area. Excavations at existing utilities should be within existing trench backfill.

However, near-surface soil within most of the project area can be excavated to depths of approximately 5 to 10 feet below existing site grade using conventional earthwork equipment, such as a track mounted excavator. It is likely that excavations along the southern portion of Palisade Road, the western end of Allen Drive, and along Bales Road will encounter shallow groundwater and may be prone to caving. Boulders and cobbles should be anticipated in excavations along the western end of Pahatsi Road, southern end of Soda Springs Road, and the eastern end of Allen Drive. Excavations which extend into volcanic rock (such as those within the northern area of the project) are anticipated to be difficult and may require heavy equipment such as a large track-mounted excavator equipped with a ripper tooth or hydraulic hammer. A “thumb” attachment may increase the ease of boulder removal at the site. In areas where moderately strong near-surface rock is encountered, spot blasting may be required.

4. CONCLUSIONS

The following conclusions are based on our literature review, subsurface investigation, and experience in the project area.

1. Groundwater seepage was encountered in 7 of the 9 test pits excavated during this investigation at depths ranging from approximately 8 inches to 5 feet below the existing ground surface. Shallow groundwater should be anticipated in excavations completed in the southern and central portion of the project area. Groundwater could increase the likelihood of trench caving, sloughing, or other adverse conditions. Due to the presence of shallow groundwater seepage, site soil is over optimum moisture content and will likely require processing (i.e., "drying out") prior to use as backfill material. Dewatering of utility trenches may be required and may involve steady pumping, filtering prior to discharge, the use of a Banker tank for temporary storage, and/or trench cut off walls to control water volume and flow.
2. We anticipate that some areas of near surface rock may be encountered during excavations for the proposed waterlines in the northern portion of the project area. A large track-mounted excavator equipped with a ripper tooth or hydraulic hammer, or spot blasting may be required in these areas. Confined excavations for under ground utilities that extend into rock will likely be difficult. Boulders and over-sized material should be anticipated in on site excavations within the western portions of the project area. Excavations at existing utilities should be within existing trench backfill.
3. Soil encountered in our test pits appeared suitable for reuse as trench backfill, provided oversized material is removed. Soil encountered in Test Pits TP-3, TP-4, TP-8, and TP-9 have a relatively high percentage of silt and may be difficult to uniformly moisture condition and compact in accordance with project specifications. However, the soil is suitable for use as intermediate trench backfill. We anticipate that screening to remove material greater than 3 inches will be required for some site soil prior to backfill of waterline and sewer trenches. As previously stated, excavated soil may be over optimum moisture content and may require drying, screening, mixing or blending with dryer soil prior to reuse as trench backfill.

5. RECOMMENDATIONS

The following recommendations are based on our understanding of the project as currently proposed, our field observations, engineering analysis, and our experience in the project area.

5.1 Underground Utility Trenches

We anticipate that the contractor will be able to excavate underground utility trenches using conventional earthmoving equipment across the majority of the site, with the exception of trenches that will be excavated in the northern portion of the site along Soda Springs Road and east end of Pahatsi Road. The John Deere 310 C backhoe used in our field exploration encountered refusal on resistant volcanic rock in Test Pit TP-6 at a depth of approximately 2.5 feet below the existing ground surface (bgs). In addition, the same backhoe encountered refusal in Test Pit TP-7 at a depth of approximately 5 feet bgs. We suspect that the refusal in Test Pit TP-7 was due to the presence of a large boulder. Based on the excavation conditions encountered in our test pits (with the exception of the volcanic rock areas), we anticipate that a backhoe or track mounted excavator will be able to excavate the utility trenches.

Due to the granular nature of the onsite soil, we expect that some caving and sloughing of utility trench sidewalls will occur. The California Occupational Safety and Health Administration (OSHA) requires all utility trenches deeper than 5 feet bgs be shored with bracing equipment or sloped back prior to entry.

Groundwater seepage was observed in our exploratory test pits and shallow subsurface seepage may be encountered in trench excavations, particularly if utility trenches are excavated during the spring or early summer. The earthwork contractor may need to employ dewatering methods as discussed in the *Construction Dewatering* section below to excavate, place and compact trench backfill materials.

Due to the moderately sloping topography across the site, we recommend utility trench cut off walls and/or relief drains be considered for any proposed steep utility lines greater than 100 feet in length. We can provide details for cut off drain construction as necessary.

During wet weather, runoff should be prevented from entering excavations. Water should be collected and disposed of outside the construction limits. Heavy construction equipment, building materials, excavated soil and vehicular traffic should not be allowed within a distance of one half the excavation depth from the top of any excavation, without prior approval by Holdrege & Kull.

5.2 Trench Backfill

Pipe material should be in accordance with project specifications and plans. Soil used as trench backfill should consist of granular material that does not contain rocks greater than 3 inches in maximum dimension. Trench backfill should consist of uniformly moisture conditioned soil and be placed in maximum 8-inch thick loose lifts prior to compacting. Unless otherwise specified by the applicable local utility district, pipe bedding and trench backfill should be compacted to at least 92 percent of the maximum dry density per ASTM D1557. Trench backfill placed within 8 inches of subgrade should be compacted to a minimum relative compaction of 95 percent of the maximum dry density per ASTM D1557. The moisture content, density and relative compaction of fill should be tested by Holdrege & Kull at regular intervals during fill placement.

If construction is performed during periods of wet weather, near-surface site soil may be significantly above optimum moisture content. These conditions could hamper equipment maneuverability and efforts to compact fill materials to the recommended compaction criteria. Fill material may require drying to facilitate placement and compaction, particularly during or following the wet season or spring snowmelt.

5.3 Construction Dewatering

During our subsurface exploration, we encountered groundwater in 7 of the 9 exploratory test pits ranging from approximately 8 inches to 5 feet below the ground surface. If excavations are performed during or immediately following the wet season or spring snowmelt, seepage may be encountered at shallow depths. The following recommendations are preliminary and are not based on a groundwater flow analysis.

We anticipate that dewatering of excavations can be performed by constructing sumps to depths below the excavation and removing water with pumps. Filtering the discharge or the use of Baker storage tanks may be necessary to detain the removed excess water during dewatering. To maintain stability of the excavation when placing and compacting the trench backfill, groundwater levels should be drawn down a minimum of 2 feet below the lowest point of the excavation.

If seepage is encountered during trench excavation, it may be necessary to remove underlying saturated soil and replace it with free draining, open-graded crushed rock. Soil backfill may be placed after backfilling with drain rock to an elevation higher than encountered groundwater.

5.4 Subsurface Water Drainage

If open-graded gravel or other permeable material is used for underground utilities, the trench should slope away from the structure or the potential flow path should be plugged with a less permeable material at the exterior of the foundation. All utility pipes should have sealed joints.

Recommended subsurface drain locations can be provided at the time of construction and when utility elevations are known.

5.5 Erosion Control

Based on our site observations and experience in the area, the predominantly granular onsite soil will be moderately susceptible to erosion, particularly on steep slopes. Best management practices (BMPs) should be incorporated into the design and construction of this project. A reference regarding appropriate BMPs is the "Erosion and Sediment Control Guidelines for Developing Areas of the Sierra Foothills and Mountains", prepared by the High Sierra Resource Conversation and Development Council, 1991. The California Regional Water Quality Control Board, Lahontan Region, Best Management Practices Plan is another source of BMPs.

Erosion and sediment control measures can be categorized as temporary or permanent. Temporary measures should be installed to provide short-term protection until the permanent measures are installed and effective. Temporary erosion control structures are designed to slow runoff velocity and intercept suspended sediment to prevent sediment discharge from the construction area while allowing runoff to continue down gradient. Typical temporary measures include properly installed silt fences, straw bales and/or wattles, sediment logs, water bars, detention basins, covering of exposed soil, channel linings, and inlet protection. Temporary erosion control measures require regular inspection and maintenance.

Berms, waterbars and ditches should be used to divert or channel storm water runoff away from sensitive, disturbed construction areas. Waterbars are intended to slow water traveling down a disturbed slope and divert water off disturbed soil into adjacent stable often well-vegetated areas. Where possible, interceptor ditches and waterbars should take advantage of existing terrain and vegetation to divert runoff before it reaches slopes and disturbed areas. Berms or waterbars should be constructed above and within disturbed areas. The spacing for temporary waterbars should be as needed to divert water off the disturbed areas. Waterbars should be located adjacent to non-erodible (vegetated or rocky) receiving areas. If stable receiving areas are not present, flow energy dissipaters or "J-hook" shaped silt fences should be positioned at the

waterbar outlet. In highly erodible soils, waterbar ditches should be protected by temporary lining or by decreasing waterbar spacing and length of flow line slopes.

Permanent erosion and sediment control measures may include rock slope protection (RSP), rock lined ditches and inlet/outlet protection, rock energy dissipaters, infiltration/detention basins, and vegetation. Intercepted water should be discharged into natural drainage courses or into other collection and disposal structures.

5.6 Plan Review and Construction Monitoring

Construction monitoring includes review of plans and specifications and observation of onsite activities during construction as described below. We should review final utility trench plans prior to construction to evaluate whether our recommendations have been implemented and to provide additional and/or modified recommendations, if necessary. We also recommend that our firm be retained to provide construction monitoring and testing services during underground utility construction to observe subsurface conditions with respect to our engineering recommendations.

6 LIMITATIONS

Our professional services were performed consistent with the generally accepted geotechnical engineering principles and practices employed in the site area at the time the report was prepared. This warranty is in lieu of all other warranties, either expressed or implied.

Our services were performed consistent with our agreement with our client. We are not responsible for the impacts of changes in environmental standards, practices or regulations subsequent to performance of our services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report. This report is solely for the use of our client. Reliance on this report by a third party is at the risk of that party.

If changes are made to the nature or design of the project as described in this report, then our conclusions and recommendations presented in the report should be reviewed by Holdrege & Kull to review our conclusions and recommendations. Additional field work and laboratory tests may be required to revise our recommendations. Costs to review project changes, perform additional field work and laboratory testing necessary to modify our recommendations are beyond the scope of services provided for this report. Additional work will be performed only after receipt of an approved scope of services, budget, and written authorization to proceed.

Analyses, conclusions and recommendations presented in this report are based on site conditions as they existed at the time we performed our subsurface exploration. We assumed that subsurface soil conditions encountered at the location of our exploratory test pits are generally representative of subsurface conditions across the project site. Actual subsurface conditions at locations between and beyond our exploratory test pits may differ. If subsurface conditions encountered during construction are different than those described in this report, we should be notified so that we can review and modify our recommendations as needed.

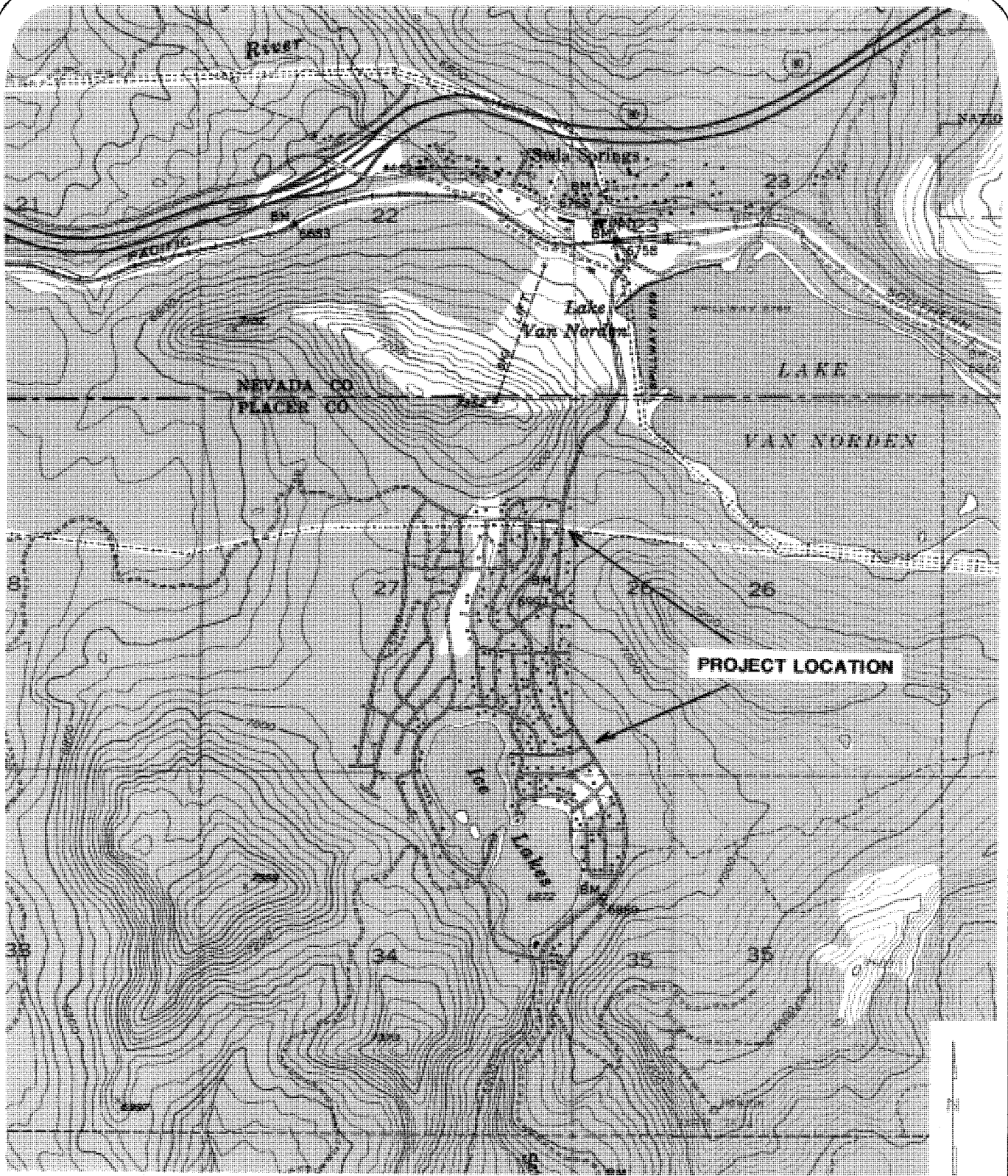
The elevation or depth to groundwater and soil moisture conditions underlying the project site may differ with time and location. The project site map shows approximate exploratory test pit locations as determined by pacing distances from identifiable site features. Therefore, test pit locations should not be relied upon as being exact.

Our scope of services did not include evaluating the project site for the presence of hazardous materials or petroleum products. Although we did not observe evidence of hazardous materials or petroleum products at the time of our field investigation, project personnel should take necessary precautions should hazardous materials be encountered during construction.

The findings of this report are valid as of the present date. Changes in the conditions of the property can occur with the passage of time. These changes may be due to natural processes or works of man, at the project site or adjacent properties. In addition, changes in applicable or appropriate standards can occur, whether they result from legislation or broadening of knowledge. Therefore, the recommendations presented in this report should not be relied upon after a period of two years from the issue date without our review.

Figure 1
Figure 2
Figure 3

Site Vicinity Map
Test Pit Location Plan
Project Geology



SOURCE: USGS NORDEN AND SODA SPRINGS, CA, 7.5 MINUTE TOPOGRAPHIC MAPS, 1992

N.T.S.

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS



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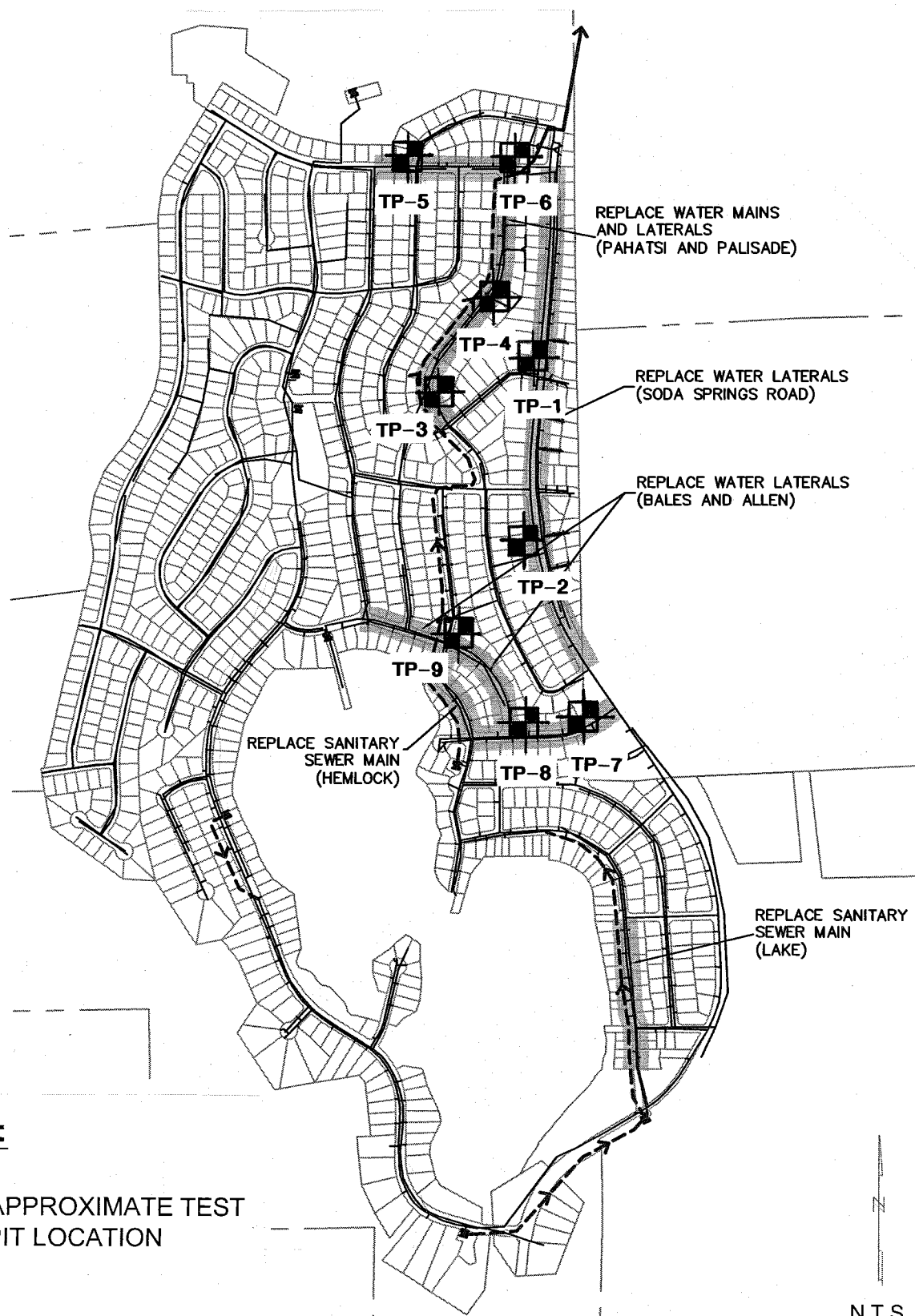
SITE VICINITY MAP
SIERRA LAKES
2008 CIP

SERENE LAKES, CALIFORNIA

PROJECT NO.: 41146-01

DATE: JUNE 2008

FIGURE NO.: 1




LEGEND:


 APPROXIMATE TEST
 PIT LOCATION
 TP-9

N.T.S.

SOURCE: ACUMEN ENGINEERING COMPANY

HOLDREGE & KULL
 CONSULTING ENGINEERS • GEOLOGISTS

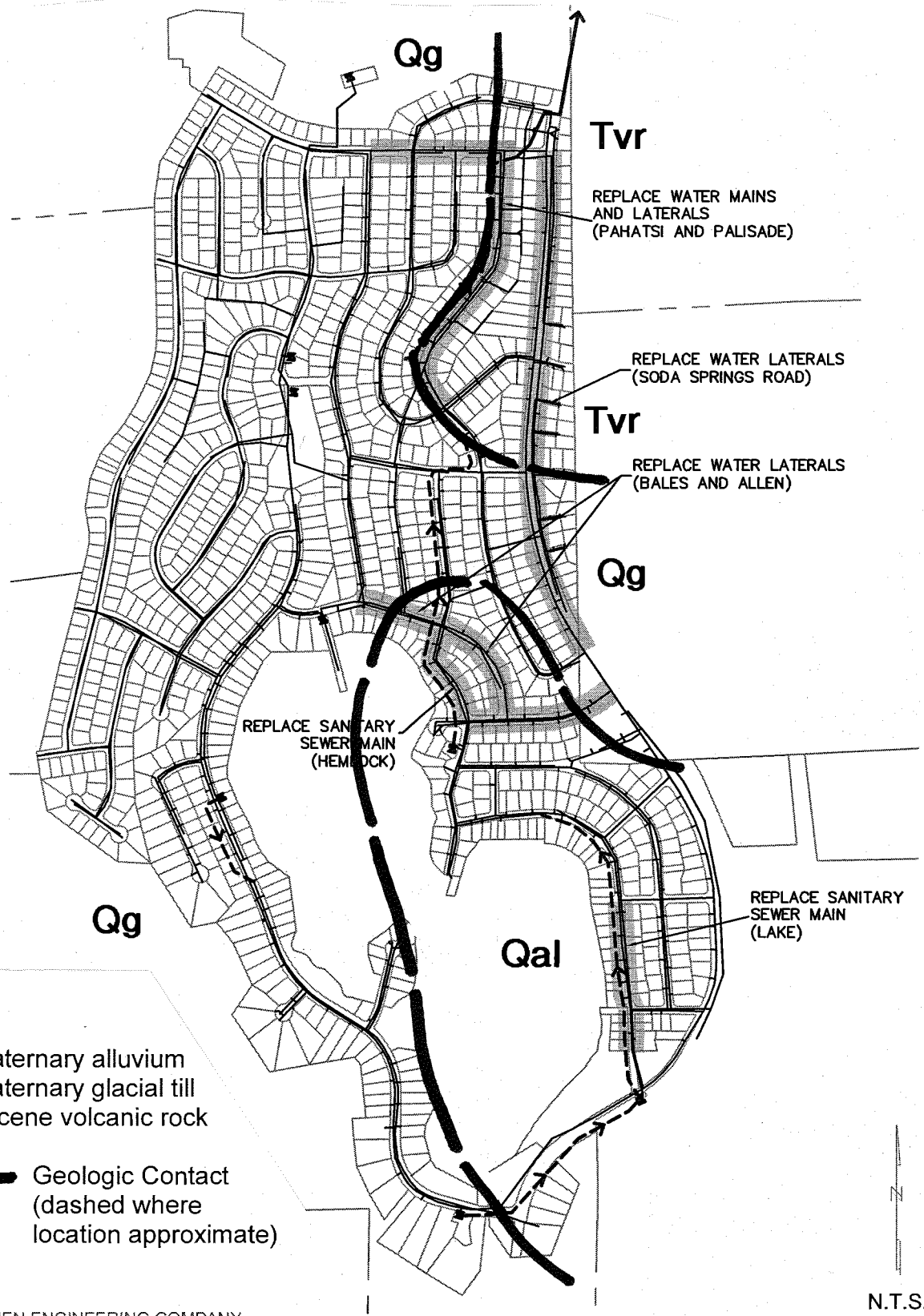

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TEST PIT LOCATION PLAN
SIERRA LAKES
 2008 CIP
 SERENE LAKES, CALIFORNIA

PROJECT NO.: 41146-01

DATE: JUNE 2008

FIGURE NO.: 2



LEGEND

- Qal Quaternary alluvium
- Qg Quaternary glacial till
- Tvr Miocene volcanic rock

————— Geologic Contact
(dashed where location approximate)

N.T.S.

SOURCE: ACUMEN ENGINEERING COMPANY

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PROJECT GEOLOGY
SIERRA LAKES
2008 CIP

SERENE LAKES, CALIFORNIA

PROJECT NO.: 41146-01

DATE: JUNE 2008

FIGURE NO.: 3

APPENDIX A Proposal



Proposal No. PT08099
April 30, 2008

Sierra Lakes Community Water District
P.O. Box 1039
Soda Springs, California 95728-1039

Attention: Mr. Bill Quesnel

Reference: *Sierra Lakes 2008 CIP Water and Sewer Project*
Soda Springs, California

Subject: *Proposal for Geotechnical Engineering Services*

This letter presents our proposal to provide geotechnical engineering services for the proposed Sierra Lakes 2008 Sewer and Water Project located in the Sierra Lakes residential community in Soda Springs, California. The purpose of our services will be to evaluate subsurface conditions in the project area, and to develop geotechnical engineering recommendations for project design and construction. Included in this proposal is a brief summary of our understanding of the project, the scope of services we can provide, and an estimate of our fees.

PROJECT DESCRIPTION

This proposal is based on conversations with you and our previous experience in the project area. We understand that the proposed project will involve replacement of approximately 2,500 lineal feet of water mains, replacing about 18 water services and laterals, and replacement of approximately 1,325 lineal feet of sanitary sewer lines within an existing residential community. The water and sewer line replacements will occur in four separate projects within the Ice Lakes 1 and 2 portions of the subdivision. Water lines will typically be about 5 feet deep and sanitary sewer lines will be about 8 to 10 feet deep.

ANTICIPATED CONDITIONS

In preparation of this proposal, we reviewed geologic maps and reports in our files regarding subsurface conditions in the project vicinity. Based on this information and our experience in the site area, we anticipate that subsurface soil conditions will consist of a thin layer of silt, sand, gravel, cobbles and boulders affiliated with glacial till deposits overlying volcanic rhyolite tuff and sedimentary rocks.

We anticipate that groundwater may be seasonally present at shallow depths and may affect the proposed construction. We anticipate that the site can be accessed by rubber tire and/or small track mounted equipment.

SCOPE OF SERVICES

Review of Available Literature

Prior to our subsurface exploration, we will review published geologic maps and geotechnical engineering reports in our files from other nearby sites. Our field exploration locations will be selected based on site access and the anticipated project layout.

Field Exploration

We propose to explore the subsurface conditions at the project site by excavating 8 to 10 test pits to depths up to approximately 12 feet below the existing ground surface. We understand that Sierra Lakes Community Water District (SLCWD) excavate the test pits. We also understand that the test pits will be excavated within right-of-way sections adjacent to existing paved roadways in areas of proposed water and sewer line replacements. The test pits will be visually logged by a field representative who will obtain bulk soil samples for classification and laboratory testing. Upon completion, the test pits will be backfilled with excavated soil and you will provide for compaction of the backfilled materials.

Laboratory Testing

The purpose of laboratory testing is to evaluate the physical and engineering properties of the soil samples collected in the field. We anticipate the laboratory testing program will consist of tests for soil classification (gradation and plasticity), moisture content, and either California Impact or ASTM D1557 Compaction Curves.

Analysis and Report

Based on the results of our field exploration and laboratory testing, we will provide our opinions and recommendations regarding the following:

- General soil and groundwater conditions at the project site, with emphasis on how the conditions are expected to affect the proposed construction;
- Discussion of special geotechnical engineering constraints such as near-surface ground water, and/or near-surface rock;
- Recommendations for temporary excavations, construction dewatering, and trench backfill, including the re-use of excavated material for trench backfill;
- Subsurface drainage recommendations; and

- Discussion of temporary and permanent erosion control measures.

We will present our opinions and recommendations in a written report complete with test pit logs and laboratory test results.

SCHEDULE AND FEES

We can complete our subsurface investigation within one to two weeks of your authorization to proceed, depending on site access and weather conditions. If weather, access, or site conditions restrict our field operations, we may need to revise our work scope and fee estimate.

We anticipate submitting our final written report within two to three weeks after completion of our subsurface exploration. If requested, we can provide preliminary verbal information with respect to our anticipated conclusions and recommendations prior to completion of our final report.

We will provide the scope of work described above for an estimated fee of \$3,800 to \$4,500 on a time and expense basis in accordance with our attached 2008 Fee Schedule. Billing will be monthly on a percent complete basis. Additional services beyond the scope of this proposal performed at the client's request will be billed on a time and materials basis using the fee schedule applicable at the time the services are provided.

LIMITATIONS

Prior to initiating our subsurface exploration, all site utilities and utility easements must be accurately located in the field, on a scaled map, or both. This information must be made available to Holdrege & Kull by the client before beginning our subsurface exploration. Our fee is not adequate to compensate for both the performance of the services and the assumption of risk of damage to such structures. Holdrege & Kull will not accept responsibility for damage to existing utilities not accurately located in the manner described above. Services rendered by Holdrege & Kull to repair them will be billed at cost.

Holdrege & Kull will perform its services in a manner consistent with the standard of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity and at the time the services will be performed. No warranty or guarantee, express or implied, is part of the services offered by this proposal.


CLOSING

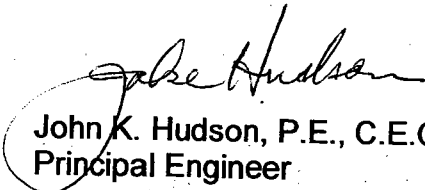
Enclosed with this proposal is our firm's Agreement for Geotechnical Engineering Services. Please sign and return one copy of the attached Agreement for Geotechnical Engineering Services to our attention if this proposal meets with

your approval. This proposal is deemed to be incorporated into and made part of the Agreement for Geotechnical Engineering Services.

We appreciate the opportunity to submit this proposal and look forward to working with you on this project. If you have any questions or need additional information, please contact the undersigned.

Sincerely,
Holdrege & Kull


Pamela J. Raynak, P.G.
Project Geologist


John K. Hudson, P.E., C.E.G.
Principal Engineer

Enclosures: Agreement for Geotechnical Engineering Services
 2008 Fee Schedule

***APPENDIX B Important Information About Your Geotechnical
Engineering Report
(Included with permission of ASFE, copyright 2004)***

Important Information About Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time to perform additional study.* Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention.* *Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.



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APPENDIX C Test Pit Logs

TEST PIT NO. 1

PROJECT NO. 41146-01		PROJECT NAME SIERRA LAKES 2008 CIP			APPROX. ELEVATION 6981 FEET		DATE 06/03/2008		PAGE 1 OF 1	
EXCAVATING METHOD JOHN DEERE 310C AND VACTOR				SAMPLING METHOD BULK			GROUNDWATER ENCOUNTERED YES @ 2 FEET		CAVED NO	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS				
1-1	--	--	1	X	SM	DARK YELLOW BROWN SILTY SAND WITH GRAVEL (SM); MOIST TO WET, LOOSE TO MEDIUM DENSE, WITH COBBLES (ESTIMATED 20% OVER 3-INCH IN DIAMATER), TRACE BOULDERS UP TO 1.5 FEET IN DIAMETER, FINE TO COARSE SAND, MINOR SEEPAGE AT 2 FEET				
			2	≡						
			3		RX	DARK GRAY RHYOLITE VOLCANIC ROCK, MODERATELY WEATHERED, CLOSELY FRACTURED, FRIABLE TO MODERATELY STRONG, DARK REDDISH BRONW STAINING ON FRACTURE SURFACES				
			4			TERMINATED AT 3 FEET TEST PIT LOCATED IN DRAINAGE SWALE ON WEST SHOULDER OF SODA SPRINGS ROAD NEAR INTERSECTION WITH CASCADE ROAD				
			5							
			6							
			7							
			8							
			9							
			10							
			11							
			12							
			13							
			14							
			15							
			16							
			17							
			18							
			19							
			20							

TEST PIT NO. 2

PROJECT NO. 41146-01		PROJECT NAME SIERRA LAKES 2008 CIP			APPROX. ELEVATION 6908 FEET		DATE 06/03/2008		PAGE 1 OF 1
EXCAVATING METHOD JOHN DEERE 310 C AND VACTOR				SAMPLING METHOD BULK		GROUNDWATER ENCOUNTERED NO		CAVED NO	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)			USCS	DESCRIPTIONS/REMARKS		
			1			SM	DARK BROWN SILTY SAND WITH GRAVEL (SM); MOIST, LOOSE TO MEDIUM DENSE, TRACE COBBLES, FINE SAND, ESTIMATED 20 % TO 30% FINES		
2-1		--	2	X					
			3			SM	DARK BROWN SILTY SAND WITH GRAVEL (SM); MOIST, MEDIUM DENSE TO DENSE, WITH COBBLES (ESTIMATED 20% TO 30% OVER 3-INCH IN DIAMETER), BOULDERS UP TO 1.5 FEET IN DIAMETER, FINE TO MEDIUM SAND, COARSE ROOTS, ESTIMATED 20% FINES, SUBANGULAR CLASTS		
			4						
			5				TERMINATED AT 5 FEET TEST PIT LOCATED ON WEST SHOULDER OF SODA SPRINGS ROAD IN FRONT OF 5179 SODA SPRINGS ROAD		
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

TEST PIT NO. 3

PROJECT NO.		PROJECT NAME		APPROX. ELEVATION		DATE		PAGE	
41146-01		SIERRA LAKES 2008 CIP		UNKNOWN		06/03/2008		1 OF 1	
EXCAVATING METHOD				SAMPLING METHOD		GROUNDWATER ENCOUNTERED		CAVED	
JOHN DEERE 310 C AND VACTOR				BULK		YES		YES	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS			
					FILL	FILL; 7 INCHES OF ROAD FILL WITH ROOT LINE AT BASE			
			1						
			2		SM-ML	HIGHLY MOTTLED YELLOW BROWN, RED BROWN, DARK BROWN AND GRAY SILTY SANDY TO SANDY SILT (SM-ML); MOIST, LOOSE/SOFT TO MEDIUM DENSE/MEDIUM STIFF, WITH GRAVEL AND COBBLES (ESTIMATED 20% OVER 3-INCH IN DIAMETER), ESTIMATED 30% FINES, FINE SAND, TRACE CHARCOAL FRAGMENTS, COBBLE LAYER AT 3.5 TO 4 FEET (MODERATELY WEATHERED ASH LAYERS)			
3-1	--	--	3						
			4						
3-2			4		SM	LIGHT YELLOW BROWN SILTY SAND WITH GRAVEL (SM); WET, MEDIUM DENSE, ESTIMATED 30% FINES, FINE SAND, WITH CHARCOAL FRAGMENTS (MODERATELY WEATHERED ASH DEPOSIT)			
			5						
			6						
			7			TERMINATED AT 5 FEET TEST PIT LOCATED IN DRAINAGE SWALE ON NORTHEAST SHOULDER OF PALISADE ROAD NEAR INTERSECTION WITH CASCADE ROAD			
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

TEST PIT NO. 4

PROJECT NO. 41146-01		PROJECT NAME SIERRA LAKES 2008 CIP			APPROX. ELEVATION 6920 FEET		DATE 06/03/2008		PAGE 1 OF 1		
EXCAVATING METHOD JOHN DEERE 310 C AND VACTOR				SAMPLING METHOD BULK			GROUNDWATER ENCOUNTERED YES AT 1.5 AND 5 FEET		CAVED YES		
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS					
			1			FILL	4 TO 5 INCHES OF ROAD FILL WITH ROOT LINE AT BASE				
			2		SM-ML	HIGHLY MOTTLED YELLOW BROWN, RED BROWN, DARK BROWN AND GRAY SILTY SAND TO SANDY SILT (SM-ML); MOIST, LOOSE/SOFT TO MEDIUM DENSE/MEDIUM STIFF, FINE SAND, WITH GRAVEL AND CHARCOAL FRAGEMENTS (MODERATELY WEATHERED ASH LAYERS)					
4-1	--	--	3		SM-ML	GRAYISH BROWN TO YELLOW BROWN SILTY SAND TO SANDY SILT (SM-ML); WET, MEDIUM DENSE, FINE SAND, ESTIMATED 50% FINES, WITH CHARCOAL FRAGMENTS AND GRAVEL (MODERATELY WEATHERED ASH DEPOSIT)					
			4								
			5								
4-2	--	--	5								
			6								
			7								
			8			TERMINATED AT 7 FEET TEST PIT LOCATED IN DRAINAGE SWALE ON SOUTHEAST SHOULDER OF PALISADE ROAD					
			9								
			10								
			11								
			12								
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								

TEST PIT NO. 5

PROJECT NO.		PROJECT NAME			APPROX. ELEVATION		DATE		PAGE
41146-01		SIERRA LAKES 2008 CIP			6945 FEET		06/03/2008		1 OF 1
EXCAVATING METHOD				SAMPLING METHOD		GROUNDWATER ENCOUNTERED		CAVED	
JOHN DEERE 310 C AND VACTOR				BULK		YES AT 1.5 FEET		NO	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS			
			1	X		FILL; HIGHLY MOTTLED DARK BROWN, RED BROWN, YELLOW BROWN, GRAYISH BROWN AND GRAY SILTY SAND TO SANDY SILT (SM-ML); MOIST TO WET, LOOSE/SOFT TO MEDIUM DENSE/MEDIUM FIRM, WITH GRAVEL AND COBBLES (ESTIMATED LESS THAN 20% OVER 3-INCH IN DIAMETER), ROOT LINE AT BASE (NATIVE MATERIALS USED AS FILL)			
5-1	--	--	2	X					
			3	X		SM DARK BROWN SILTY SAND (SM); SATURATED, LOOSE TO MEDIUM DENSE, ESTIMATED 30% FINES, FINE TO MEDIUM SAND, INCREASING COBBLES AT 4 FEET (ESTIMATED 20% OVER 3-INCH IN DIAMETER), TRACE BOULDERS UP TO 1.5 FEET IN DIAMETER			
5-2	--		4	X					
			5			TERMINATED AT 5 FEET TEST PIT LOCATED IN DRAINAGE SWALE ON NORTH SHOULDER OF PAHATSI ROAD NEAR INTERSECTION WITH CASCADE ROAD			
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

TEST PIT NO. 6

PROJECT NO.		PROJECT NAME			APPROX. ELEVATION		DATE		PAGE
41146-01		SIERRA LAKES 2008 CIP			6946 FEET		06/03/2008		1 OF 1
EXCAVATING METHOD				SAMPLING METHOD		GROUNDWATER ENCOUNTERED		CAVED	
JOHN DEERE 310C WITH 24" BUCKET				BULK		NO		NO	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS			
			1	X	FILL	FILL; DARK BROWN SILTY SAND WITH GRAVEL (SM); MOIST, MEDIUM DENSE, FINE TO MEDIUM SAND, ROOT LINE AT BASE			
6-1	--	--	2	█	SM	BROWN SILTY SAND (SM); MOIST, MEDIUM DENSE, FINE SAND, WITH COBBLES AND BOULDERS			
			3		RX	REFUSAL ON PINK RHYOLITE VOLCANIC ROCK AT 2.5 FEET, SLIGHTLY WEATHERED, WIDELY FRACTURED, STRONG, EXCAVATES INTO ANGULAR COBBLES AND BOULDERS UP TO 1.5 FEET IN DIAMETER			
			4			TEST PIT LOCATED ON NORTH SHOULDER OF PAHATSI ROAD NEAR INTERSECTION WITH PALISADE ROAD			
			5						
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

TEST PIT NO. 7

PROJECT NO.		PROJECT NAME			APPROX. ELEVATION		DATE	PAGE
41146-01		SIERRA LAKES 2008 CIP			UNKNOWN		06/03/2008	1 OF 1
EXCAVATING METHOD				SAMPLING METHOD		GROUNDWATER ENCOUNTERED	CAVED	
JOHN DEERE 310 C AND VACTOR				BULK		YES AT 2.5 FEET	NO	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS		
			1		SM	DARK BROWN SILTY SAND (SM); MOIST, LOOSE, WITH ORGANIC MATTER		
			2		SM	OLIVE BROWN SILTY SAND WITH GRAVEL (SM); MOIST, LOOSE TO MEDIUM DENSE, FINE TO COARSE SAND		
7-1	--	--	2	X				
			3		SM	GRAY SILTY SAND WITH GRAVEL (SM); WET, MEDIUM DENSE TO DENSE, ESTIMATED 20% TO 30% FINES, FINE TO MEDIUM SAND, WITH COBBLES (ESTIMATED 20% TO 30% OVER 3-INCH IN DIAMETER), TRACE BOULDERS, ROUNDED TO ANGULAR CLASTS		
			4					
			5					
			6			REFUSAL AT 5 FEET BOULDERS AT GROUND SURFACE IN AREA OF TEST PIT TEST PIT LOCATED IN DRAINAGE SWALE ON NORTH SHOULDER OF ALLEN DRIVE NEAR INTERSECTION WITH SODA SPRINGS ROAD		
			7					
			8					
			9					
			10					
			11					
			12					
			13					
			14					
			15					
			16					
			17					
			18					
			19					
			20					

TEST PIT NO. 8

PROJECT NO. 41146-01		PROJECT NAME SIERRA LAKES 2008 CIP			APPROX. ELEVATION UNKNOWN		DATE 06/03/2008		PAGE 1 OF 1
EXCAVATING METHOD JOHN DEERE 310 C AND VACTOR				SAMPLING METHOD BULK		GROUNDWATER ENCOUNTERED YES AT 8 INCHES		CAVED YES	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS			
			▽						
			1		SM	DARK BROWN SILTY SAND (SM); MOIST, LOOSE, WITH ORGANIC MATTER			
			2		SM	YELLOW BROWN SILTY SAND (SM); WET TO SATURATED, LOOSE TO MEDIUM DENSE, ESTIMATED 30% FINES, FINE SAND, THINLY BEDDED, TRACE GRAVEL (UNIT COMPRISED OF INTERBEDDED LAYERS OF SAND AND SILT)			
			3						
8-1			4	X					
			5			TERMINATED AT 5 FEET			
			6			TEST PIT LOCATED IN DRAINAGE SWALE ON NORTH SHOULDER OF ALLEN DRIVE AT INTERSECTION WITH BALES ROAD			
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

TEST PIT NO. 9

PROJECT NO. 41146-01		PROJECT NAME SIERRA LAKES 2008 CIP			APPROX. ELEVATION UNKNOWN		DATE 06/03/2008		PAGE 1 OF 1
EXCAVATING METHOD JOHN DEERE 310 C AND VACTOR				SAMPLING METHOD BULK		GROUNDWATER ENCOUNTERED YES AT 8 INCHES		CAVED YES	
SAMPLE NO.	PERCENT PASSING #200 SIEVE	PLASTICITY INDEX	DEPTH (FT)		USCS	DESCRIPTIONS/REMARKS			
			▽						
			1		SM	DARK BROWN SILTY SAND (SM); MOIST, LOOSE, WITH ORGANIC MATTER			
			2		SM	YELLOW BROWN SILTY SAND (SM); WET TO SATURATED, LOOSE TO MEDIUM DENSE, FINE SAND, ESTIMATED 30% FINES, THINLY BEDDED, TRACE GRAVEL AND COBBLES (UNIT COMPRISED OF INTERBEDDED LAYERS OF SAND AND SILT)			
			3						
9-1	--	--	4	X					
			5			TERMINATED AT 6 FEET TEST PIT LOCATED IN DRAINAGE SWALE ON NORTH SHOULDER OF BALES ROAD AT INTERSECTION WITH HEMLOCK DRIVE			
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						