

**TWAIN HARTE COMMUNITY SERVICES DISTRICT
PROJECT DOCUMENTS FOR**

EPROSON PARK SEWER LINE REPLACEMENT PROJECT

**DISTRICT PROJECT
300-57-0001**

TWAIN HARTE COMMUNITY SERVICES DISTRICT

P.O. Box 649
Twain Harte, CA 95383

PROJECT DOCUMENTS

for construction of

DISTRICT PROJECT 300-57-0001

EPROSON PARK SEWER LINE REPLACEMENT PROJECT

Approved for Construction:



Tom C. Trott, P.E.
General Manager

AUGUST 2018

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**PART I
NOTICE INVITING INFORMAL BIDS**

**EPROSON PARK SEWER LINE REPLACEMENT PROJECT
PROJECT 300-57-0001**

NOTICE IS HEREBY GIVEN THAT the Board of Directors of the Twain Harte Community Services District (District), Twain Harte, California, invites and will receive sealed bids for furnishing all labor, equipment, materials, and services specified for the construction of Twain Harte Community Services District Project 300-57-0001, Eproson Park Sewer Line Replacement Project, in conformance with the Contract.

The work generally consists of replacement of approximately 233 linear feet of 8" diameter sewer line, including the removal of existing 8" sewer line, installation of new 8" PVC sewer line and all related construction activities as shown in the drawings and described in these contract documents and specifications. All work shall be substantially complete by November 3, 2018. The engineer's estimated cost of construction is \$95,680.

An optional pre-bid meeting to discuss the Project will be held on Tuesday, August 28, 2018 at 8:30 a.m., local time, at the Project site – 22901 Meadow Drive, Twain Harte, CA 95383.

The District will receive bids at its receptionist area until 3:00 p.m., local time, on Wednesday, September 5, 2018, at 22912 Vantage Pointe Drive, Twain Harte, California, at which time and place, in the District's Board Meeting Room, accepted bids will be publicly opened and declared aloud by the Secretary of the District, and before the General Manager, or his representatives. Bids may also be mailed to P.O. Box 649, Twain Harte, CA 95383 so long as they are received prior to the above bid time. **NO LATE BIDS WILL BE ACCEPTED.**

Project Documents, addenda (if any) and preliminary engineering reports are available for viewing without charge through the District website at www.twainhartecsd.com/bidding and may be examined or obtained at the District's offices at 22912 Vantage Pointe Drive, Twain Harte, California, from 7:00 a.m. to 4:00 p.m., Monday through Friday. The bid results will be available on the District website after the bid opening.

Preliminary engineering or geotechnical reports (if any) are not part of the Project Documents. Such reports, if provided, are for Bidders' information, and Bidders shall assume all risks concerning use of such reports in preparing their bids.

Copies of the Project Documents and addenda may be obtained at the District's reception area or by calling the District at (209) 586-3172. A complete set of Project Documents on CD is available at no cost; each complete paper set of Project Documents is available for a nonrefundable fee of \$10. Payment must be made at the time the documents are obtained in the form of a check (payable to Twain Harte Community Services District) or cash.

Inquiries regarding further information about the Project may be directed to Tom Trott, General Manager, (209) 586-3172 or ttrott@twainhartecsd.com. Inquiries regarding directions to the District office and the location of the pre-bid meeting may be directed to the District's receptionist at (209) 586-3172.

All bidders and subcontractors to bidders must be registered and qualified to perform public work pursuant to Section 1725.5 of the California Labor Code, subject to limited legal exceptions

under California Labor Code Section 1771.1.

Notice is hereby given that, pursuant to Part 7, Chapter 1, Article 2, Section 1770 et. seq. of the Labor Code of the State of California, the successful bidding contractor and its subcontractors shall pay their labor forces not less than the general prevailing rate of per diem wages as determined by the State of California Director of Industrial Relations, and travel and subsistence pay as such are defined in applicable collective bargaining agreements filed in accordance with Section 1773.8 of said Labor Code, for work needed and performed on this Project. Said determinations, in effect at the time of publishing this notice, are available at the above identified District office, or may be reviewed or examined by going to www.dir.ca.gov. It shall, pursuant to the provisions of Section 1773.2 of said Labor Code, be a requirement of the work for the successful bidding contractor to post and maintain a copy of said wages' determination at the Project site throughout duration of the work. Pursuant to California Labor Code Section 1771.4, this Contract is subject to compliance monitoring and enforcement by the California Department of Industrial Relations.

Bids to receive consideration must be signed by the bona fide prime contractor who proposes to undertake the work and who is properly licensed in accordance with the Contractor's License Law as provided beginning at Section 7000 of the Business and Professions Code of the State of California. The license classification(s) required for the work are as follows: Class A. The Bidder shall have the required license(s). Each bid submitted (hard copy) must be on the forms furnished herein and in accordance with California Public Contract Code section 20683 must be accompanied by cash, a certified or cashier's check made payable to the District or Bidder's bond for an amount not less than ten percent (10%) of the aggregate total bid. A form bidder's bond is included in this bid packet. Pursuant to California Code of Civil Procedures Section 995.311, the District will verify all bonds for this Project are issued and executed by a California admitted surety.

The Contractor shall be allowed to substitute securities for any monies withheld to ensure performance under this Contract pursuant to Section 22300 of the California Public Contract Code.

The District Board of Directors reserves the right to reject any or all bids for the work and waive any non-material irregularities or omissions in the bids received.

Dated at Twain Harte, California, August 20, 2018.



Carolyn Higgins, Board Secretary
Twain Harte Community Services District

PART II INSTRUCTIONS TO BIDDERS

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PART II INSTRUCTIONS TO BIDDERS

SECTION 1 – PREPARATION AND SUBMISSION OF BIDS

Bids shall be prepared on the forms included in Part III, Bid Forms. All bid forms shall be properly executed and all blank spaces shall be filled in. Any modifications to Bidder-supplied information shall be initialed by the Bidder. Failure to comply with these requirements may, at the discretion of the District, be grounds for rejection of the bid.

Any changes by the Bidder to the District-printed bid forms may, at the discretion of the District, be grounds for rejection of the bid.

All forms in Part III, Bid Forms shall be submitted in their entirety in a sealed envelope. The sealed "Bid" envelope shall be in the District's possession by the time stipulated in the Notice Inviting Bids, Part I. Partial or incomplete bids will not be considered. Bids shall be in strict conformity with Parts I, II, and III for District Project 300-57-0001 and any Addenda thereto.

Each bid shall be enclosed in a sealed envelope distinctly marked "Bid" and bearing the District's project number, title as given, and the name and address of the Bidder. Bids shall either be (1) delivered in person at the Twain Harte Community Services District, 22912 Vantage Pointe Drive, Twain Harte, California, during normal business hours, being 7 a.m. to 4 p.m., Monday through Friday, or, (2) mailed to "Twain Harte Community Services District, P.O. Box 649, Twain Harte, CA 95383, Attention: Secretary of the District" by the time and date restrictions listed in Part I, Notice Inviting Bids.

Where "days" is used in the Project Documents it shall mean calendar days unless stated otherwise.

Each bid shall show the full legal name and business address of the Bidder, including street address if it differs from its mailing address, and shall be signed with the usual signature of the person or persons authorized to bind the Bidder and shall be dated. Bids by a partnership or joint venture shall list the full names and addresses of all partners or joint ventures. The state of incorporation and corporate number shall be provided. The name of each signatory shall be typed or otherwise clearly imprinted below each signature where requested. When requested by the District, satisfactory evidence of the authority of any signatory on behalf of the Bidder shall be furnished.

The preparation of a bid shall be by and at the expense of the Bidder.

Bids shall be firm for sixty (60) days from and after the stated closing time, or until a Contract is fully executed by the District and a Bidder, whichever is earlier.

SECTION 2 – EXAMINATION OF DOCUMENTS AND EXPLANATION TO BIDDERS

The Project Documents consist of Notice Inviting Informal Bids (Part I), Instructions to Bidders (Part II), Bid Forms (Part III), Contract and Bonds (Part IV), General Conditions (Part V), Special Conditions (Part VI), Technical Specifications (Part VII) and Project Drawings (Part VIII).

Any Bidder planning to submit a bid is responsible for examining with appropriate care the complete Project Documents and all Addenda, and is also responsible for informing itself with respect to all conditions, which might in any way affect the cost or the performance of any work. Failure to do so will be at the sole risk of the Bidder, and no relief can be given for errors or omissions by the Bidder.

All questions relative to the Contract prior to the issuance of the Notice of Award shall be directed to Tom Trott, Twain Harte Community Services District, P.O. Box 649, Twain Harte, CA 95383.

Should the Bidder find discrepancies in or omissions from the Project Documents, or should the intent or meaning of the documents appear unclear, the Bidder shall at once notify the District of such findings. Questions received less than five (5) days prior to the date for opening of the bids may not be answered. If the Bidder asks a question within five (5) days prior to the date for opening of the bids, the Bidder shall notify the District in writing of such question before the opening of the bids. The Bidder making notifications shall be solely responsible for their timely receipt by the District. Should the Bidder find patent ambiguities in the Project Documents, the Bidder shall at once notify the District of such findings in writing prior to opening of the bids. Replies to such notification of patent ambiguities may be made in the form of Addenda, which will be issued simultaneously to all persons who have obtained a copy of the Project Documents from the District. Failure of the Bidder awarded the Contract to notify the District of such patent ambiguity shall eliminate any and all recourse, including time extensions and Contract price adjustments the Bidder may have, against the District occurring as a result or arising out of such patent ambiguity.

The Bidder, by submission of its bid, confirms it has familiarized itself with the Project Documents and has found them fit and sufficient for the purpose of preparing its bid.

Copies of the Project Documents preliminary engineering and geotechnical reports (if any), are available for examination without charge during normal business hours (7 a.m. – 4 p.m., Monday through Friday) at the office of the:

Twain Harte Community Services District
22912 Vantage Pointe Drive
Twain Harte, CA 95383

At the time each Bidder obtains a copy of the Project Documents, it shall designate the address to which Addenda are to be sent. Such address shall be a street address. Post office boxes alone are not acceptable. The Bidder shall also supply the telephone number, fax number, and email address.

SECTION 3 – SITE INSPECTION AND CONDITIONS

In addition to examination of the Project Documents, each prospective Bidder shall become fully informed regarding all existing and expected conditions and matters, which could affect any work or performance of any work.

The Bidder shall investigate and acquaint itself with the nature and location of work and the general and local conditions, and particularly, but without limitation, with respect to the following: those affecting transportation, access, disposal, handling, and storage of materials; availability and quality of labor, water, and electric power; availability and condition of roads; climatic conditions and seasons; river hydrology and river stages; physical conditions at the work sites and the Project areas as a whole; topography and ground surface conditions; equipment and facilities needed preliminary to and during performance of the Contract; and all other matters that can in any way

affect performance of the Contract. The failure of the Bidder to acquaint itself with any applicable condition will not relieve it from the responsibility for properly estimating either the difficulties or the costs of successfully performing the Contract.

Where the District has made investigations of subsurface conditions in areas where work is to be performed under the Contract, such investigations are made only for the purpose of study and design. The use of such investigations, which is presented in the form of an Engineering Report, shall be at the sole risk of the Bidder. The Engineering Report is not part of the Project Documents. The Engineering Report is provided for the benefit of Bidders, and Bidders shall assume all risks concerning use of the Engineering Report in preparing their bids. The Bidder shall make whatever other reasonable investigations as are necessary to determine to the Bidder's satisfaction, the character and amount of rock, gravel, sand, silt, organic materials, groundwater, and all other materials to be encountered in the work to be performed. The District makes no representation as to the correctness of the subsurface information, nor as to the locations of the boring holes, nor that the subsurface information represents a cross section of the material to be encountered in performing excavation and earthwork on the Project.

The District assumes no responsibility whatsoever in respect to the sufficiency or accuracy of the Engineering Report, the records thereof, or of the interpretations set forth therein or made by the engineer thereof; and there is no warranty or guaranty, either expressed or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout such areas, or any part thereof, or that unforeseen development may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

Where work on private property is a part of this Project, the District has easements and/or rights of entry to the various private parcels on this Project. A portion of this work is located on District property and a portion of this project is located within easements on private property. District will provide pre-bid access to the portion of the project located on private property during the optional pre-bid meeting for the purpose of site inspection. At the District's discretion, District may provide pre-bid private property site inspection access to bidders at other times if bidders request such access two working days in advance by contacting the District's job-site representative, Tom Trott, at telephone number (209) 586-3172 or ttrott@twainhartecsd.com.

Any failure to fully investigate the sites or the foregoing conditions shall not relieve the Bidder from responsibility by estimating properly the difficulty or cost of successfully performing any work. Neither the District nor any of the District's representatives or agents assumes any responsibility for any verbal representation regarding all existing and excepted site conditions.

SECTION 4 – ADDENDA TO THE PROJECT DOCUMENTS

The District may modify any provision or part of the documents at any time prior to three (3) days before closing time, provided that the closing time set forth in Part I, Notice Inviting Bids, may be extended by the District at any time prior to said closing time. Such revisions, if any, will be in the form of Addenda, which will be issued as set forth in this Part II, Section 2, Examination of Documents and Explanation to Bidders.

Contractor failure to properly acknowledge all Addenda issued (including if none) may, at the discretion of the District, be grounds for rejection of the bid. This acknowledgement shall be provided by completing and signing the form included in Part III, Bid Forms, Section 1, Bid, herein. Each Bidder shall submit this acknowledgement as a part of its bid, but in no circumstances will the acknowledgement be accepted subsequent to the closing time for bids.

SECTION 5 – REGISTRATION OF CONTRACTORS

All Bidders and their Subcontractors must be registered and qualified to perform public work pursuant to Section 1725.5 of the California Labor Code. Bids will not be accepted nor any contract entered into without proof that the Bidder and its subcontractors are registered with the California Department of Industrial Relations to perform public work pursuant to California Labor Code Section 1725.5, subject to limited legal exceptions.

All Bidders shall have the required license(s) under the provisions of Chapter 9, Division 3, of the Business and Professions Code of the State of California to do the type of work contemplated in the Project and shall be skilled and regularly engaged in the general class or type of work called for under the Contract.

Each Bidder shall set forth in its bid the number, classification, and date of expiration of such license(s).

SECTION 6 – SCHEDULE OF BID

The quantities included in the bid are estimates of the work to be completed.

Bids shall be prepared on the form contained in Part III, Bid Forms, Section 2, Schedule of Bid. The total bid shall constitute full compensation for furnishing all materials and doing all work in the Contract.

No substitution of materials, methods, or listed alternatives not specified in the Specifications shall be permitted.

SECTION 7 – NOT USED

SECTION 8 – COMPARISON OF BIDS

Bids will be compared on the basis of the total bid stated in Part III, Section 2, Schedule of Bid.

For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies and conflicts found on the face of the bidding schedule as submitted by Bidders:

- a. In case of discrepancy between unit price and extended price, the unit price will govern and will be used to correct the extension of unit prices.
- b. Apparent errors in addition of lump-sum and extended prices will be corrected.
- c. If no monetary symbol (\$ or ¢) is entered with a unit price, lump sum, or extension, a dollar sign (\$) will be assumed to be the Bidder's intent.
- d. In the event that there is a discrepancy in the bid between the total bid price written in words and indicated in figures, the price written in words shall govern.

The District will recalculate the total bid based on the resolution of any arithmetic discrepancies and conflicts found. The lowest bid will be determined after any required recalculations.

Any bid that, in the opinion of the District, is so unbalanced between the various Contract items as to be detrimental to the best interests of the District will be rejected.

SECTION 9 – BIDDER'S STATEMENT OF SUBCONTRACTORS

In the form entitled Section 4, Bidder's Statement of Subcontractors, provided within Part III of this Project Manual, and pursuant to Section 4100 et seq. of the Public Contract Code, the Bidder shall submit the name, California State License Board (CSLB) license number, city, and state 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 the Project Documents, in an amount in excess of one-half of one percent (½%) of the bid total as set forth in the Schedule of Bid, Part III, Section 2. The prime contractor shall indicate the portion that will be done by each such subcontractor for each such portion as is defined by the subcontractor in its bid.

Failure to list subcontractors in Part III, Bid Forms, Section 4, Bidder's Statement of Subcontractors, is an express statement by the Bidder that it will perform that portion of the work with its own forces. The prime contractor may not substitute any person or subcontractor for a listed subcontractor without first obtaining written permission of the District's General Manager pursuant to provisions of Section 4107 of the Public Contract Code.

SECTION 10 – QUALIFICATION OF BIDDERS

If Bidder is a corporation, it shall submit its state of incorporation and corporate number in addition to its business address; if a partnership or joint venture, full names of all partners or joint venturers shall be given in the form included herein as Part III, Bid Forms, Section 1, Bid.

The District expressly reserves the right to reject any bid if it determines that the Bidder's business and technical organization, financial resources, safety information, plant and equipment to be used in performing work, or lack of successful experience in performing similar work is such that it is not in the District's best interest to accept the Bidder's bid.

Contractors or subcontractors who have been determined to have violated any public work laws and who are declared ineligible to perform work on public works projects by the Labor Commissioner as set forth in the Labor Code of the State of California, Section 1777.1 or 1777.7, are ineligible to bid or be awarded a contract for any public works project or to perform work as a subcontractor on a public works project.

SECTION 11 – CERTIFICATION OF COMPLETION REQUIREMENTS

By signing Part III, Bid Forms, Section 1, Bid, the Bidder acknowledges acceptability of the construction time frame as set forth in Part IV, Contract and Bonds, Section 1, Contract, "Time of Performance." The time specified for this work shall be deemed to start from the receipt of the Notice to Proceed. Contractor must submit a reasonable construction schedule describing how the Contractor will meet the construction time frame requirements.

SECTION 12 – BID SECURITY

No bid will be considered unless it is accompanied by bid security in the form of cash, a certified check or a cashier's check, payable to the order of the Twain Harte Community Services District, for

a sum not less than ten percent (10%) of the bid total as set forth in the Bidder's Schedule of Bid, Part III, Section 2, or a Bidder's bond in the same amount executed as surety by a corporation acceptable to the District and authorized to issue such surety bond in the State of California. Such bond shall be in conformity with the form included as Section 9 of Part III, Bidder's Bond, of the Project Documents.

Upon an award to the lowest bidder, the security of an unsuccessful bidder shall be returned in a reasonable period of time, but in no event shall that security be held by the District beyond 60 days from the time the award is made.

SECTION 13 – BIDDER'S MODIFICATION AND WITHDRAWAL OF BIDS

A Bidder may, without prejudice to itself, modify or withdraw its bid by written request, provided that the request is received by the District prior to the time when bids are to be received. Following withdrawal of its bid, the Bidder may submit a new bid, provided that such new bid is received prior to the stated closing time.

SECTION 14 – BID OPENING AND AWARD OF CONTRACT

The District's anticipated schedule is as follows (actual schedule may vary depending on bid results, response time of successful bidder, and other unforeseen events):

- Bid Opening: September 5, 2018
- Contract Award: September 12, 2018
- Contract, Bonds and Insurance Completion: September 20, 2018
- Notice to Proceed: September 20, 2018

Bids will be kept unopened until the time stated for opening of bids. At such time, the contents of each bid will be made public. No responsibility shall attach to the District or any of its officers, employees, or representatives for the premature opening of a bid. All Bidders or their authorized representatives are invited to be present at the bid opening.

After opening the bids and prior to award of the Contract, the District will review the bids submitted and make a determination of the responsiveness of bids received. If the District Board of Directors or General Manager determines any bid to be nonresponsive, it reserves the rights to reject any or all bids. The District reserves the rights to reject any or all bids and to waive any non-material irregularities or omissions in bids received.

The successful Bidder will be notified in writing by the District of the Award of Contract as soon as practical and within ten (10) days after opening of bids. Accompanying the District's Notice of Award will be the Contract, in duplicate, which the successful Bidder will be required to sign and return together with the Performance Bond, Payment Bond, and the required number of copies of insurance certificates and endorsements to the District within five (5) days following receipt of such Notice of Award. The District will promptly determine whether such Contract, bonds, and insurance certificates and endorsements are acceptable, and upon such determination will forward a fully signed copy of the Contract to the successful Bidder. The District may issue a Notice to Proceed at any time prior to or after forwarding the Contract. The failure of any Bidder to whom the District may award the Contract as aforesaid to sign and return to the District the Contract, together with the required Performance Bond, Payment Bond, and insurance certificates and endorsements within the specified time period, shall entitle the District to declare a breach of Contract by such

Bidder, to award the Contract to another Bidder, and to declare a forfeiture of the Bidder's bid security accompanying the bid.

In the event of such failure, the District will suffer damage, the amount of which is difficult, if not impossible, to ascertain; and the District shall, therefore, be entitled to retain the amount of such cashier or certified check submitted by the Bidder as bid security, or to enforce the provisions of the Bidder's Bond in the amount thereof, as liquidated damages for such breach of Contract, as provided by applicable law.

SECTION 15 – RELIEF OF BIDDERS

Should a Bidder claim a mistake was made in its bid, the Bidder shall give the Secretary of the District written notice within five (5) business days after bid opening of the alleged mistake, and detail in said notice the circumstances under which the mistake occurred, all in accordance with Public Contract Code, Section 5103. Final determination of relief of Bidders shall be made by the District Board of Directors. Should the District Board of Directors accept the Bidder's claim for relief, the Bidder will be released from all obligations and further requirements, and its bid security will be returned as applicable.

SECTION 16 – BONDS

The Bidder to whom the Contract award is made shall, at the time of execution of the Contract, furnish to the District a Performance Bond and a Payment Bond, executed as surety by a corporation acceptable to the District and authorized to issue such surety bonds in the State of California. Such bonds shall be substantially in the form included in Sections 2 and 3, respectively, of Part IV of the Project Documents. Such Performance Bond and Payment Bond shall be for one hundred percent (100%) of the bid total as set forth in the Bidder's Schedule of Bid, Part III, Section 2. The entire cost of these bonds shall be borne by the successful Bidder.

If the surety on any bond furnished by the Contractor is declared bankrupt, or becomes insolvent, or its right to do business is terminated, or it ceases to meet the requirements of the above paragraph, the Contractor shall, within five (5) business days thereafter, notify the District and substitute another bond and surety, both of which must be acceptable to the District.

SECTION 17 – NONDISCRIMINATION IN EMPLOYMENT

Contracts for work under this Bid will obligate the Contractor and subcontractors not to discriminate in employment practices.

SECTION 18 – AGREEMENT TO ASSIGN (BIDDERS)

The Bidder's attention is directed to the provisions of Government Code Section 4552, which requires that in submitting a bid to a public purchasing body, Bidders offer to assign all rights arising from violations of antitrust regulations to the public entity if the bid is accepted. In pertinent part, Government Code Section 4552, reads as follows:

In submitting a bid to a public purchasing body, the Bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec 15) or under the Cartwright Act (Chapter 2 [commencing with Section 16700] of Part 2 of Division 7 of the Business and

Professions Code), arising from the purchase of goods, materials, or services by the Bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the Bidder.

SECTION 19 – PROJECT DOCUMENTS TO SUCCESSFUL BIDDER

The Bidder to whom award is made may obtain three (3) sets of Project Documents for the work at no extra cost. It is the Contractor's responsibility to provide its own set(s) of conformed Project Documents.

SECTION 20 – BID PROTESTS

Any protest of the proposed award of Contract to the Bidder with the lowest responsive bid must be submitted in writing to the Secretary of the District, no later than 4 p.m. of the second (2nd) business day following the date of the Bid opening. All protests shall comply with the following procedures:

1. The initial protest must contain a complete statement of the basis for the protest.
2. The protest must state the facts and refer to the specific portion of the document or the specific statute that form the basis for the protest. The protest must include the name, address, and telephone number of the person representing the protesting party.
3. The party filing the protest must concurrently transmit a copy of the initial protest to the Bidder deemed the lowest Bidder.
4. The party filing the protest must have actually submitted a Bid on the Project. A subcontractor of a party filing a Bid on this Project may not submit a Bid Protest. A party may not rely on the Bid Protest submitted by another Bidder, but must pursue its own protest in a timely manner.
5. The procedure and time limits set forth in this Section are mandatory and are the Bidder's sole and exclusive remedy in the event of a Bid Protest. The Bidder's failure to fully comply with these procedures shall constitute a waiver of any right to further pursue the Bid Protest, including filing of a challenge of the award pursuant to the California Public Contract Code, filing of a claim pursuant to the California Government Code, or filing of any other legal proceedings.
6. The District shall review all timely protests prior to formal award of the Contract. The District shall not be required to hold an administrative hearing to consider timely protest, but may do so at the option of the General Manager. At the time of the District Board of Directors' consideration of the award of the Contract, the District Board will also consider the merits of any timely protests. The District Board of Directors may either accept the protest and award the Contract to the next lowest Bidder, or reject the protest and award to the lowest Bidder.
7. These bid protest procedures shall not limit the District Board of Directors' or the General Manager's ability to reject all bids.

PART III BID FORMS

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PART III BID FORMS

SECTION 1 – BID

In response to the Notice to Contractors, Part I, dated August 20, 2018, and in accordance with the accompanying Instructions to Bidders, Part II, the undersigned hereby proposes to the Twain Harte Community Services District, sometimes referred to as “District,” to furnish all plant, labor, technical and professional services, supervision, materials, and equipment (other than materials and equipment specified as furnished by the District), and to perform all operations necessary and required for construction of District Project 300-57-0001, Eproson Park Sewer Line Replacement Project, in accordance with the Project Documents, Parts I through VIII, inclusive, and any Addenda thereto, for District Project 300-57-0001, and at the prices stated opposite the respective items set forth in Part III, Bid Forms, Section 2, Schedule of Bid, attached hereto.

This Bid constitutes a firm offer to the District, which cannot be withdrawn for sixty (60) days from and after the date set for opening of bids, or until a contract is fully executed by the District, whichever is earlier.

The undersigned Bidder hereby certifies that it has examined and is fully familiar with all of the provisions of the Project Documents and records of geotechnical investigations, where applicable; has carefully checked all of the words and figures shown on its Schedule of Bid, Part III, Section 2; has carefully reviewed the accuracy of all statements in this Bid and attachments hereto; and understands and agrees that the District will not be responsible for any errors or omissions on the part of the undersigned in preparing this Bid.

The undersigned Bidder has, by careful examination of the Project Documents and records of geotechnical investigations, where applicable, and by examination of the actual site conditions, satisfied itself as to the nature and location of all work, the general and local conditions to be encountered in the performance of any work, the requirements of the Contract, and all other matters that can in any way affect the work or the cost thereof.

If awarded the Contract, the undersigned agrees to execute and deliver to the District within five (5) days after receipt of District’s Notice of Award, the Contract and the necessary Performance Bond, Payment Bond, and insurance certificates and endorsements.

Attached hereto and by this reference incorporated herein and made a part of this Bid are the following, which have been completed and executed by the undersigned Bidder:

- Part III, Section 2 - Schedule of Bid
- Part III, Section 3 - Bidder’s License Certification and Department of Industrial Relations Registration
- Part III, Section 4 - Bidder’s Statement of Subcontractors
- Part III, Section 5 - Noncollusion Declaration to be Executed by Bidder and Submitted With Bid
- Part III, Section 6 - Bidder’s Bond

Enclosed herewith is a bid security in the form of a Bidder’s Bond in favor of, or a certified check or a cashier’s check payable to Twain Harte Community Services District, or cash in an amount

not less than ten percent (10%) of the amount of the Bid total as set forth in the Schedule of Bid, Part III, Section 2, which shall be and remain the property of the District in the event of failure of the undersigned to execute and deliver the Contract and to furnish the necessary bonds and insurance certificates and endorsements in accordance with Part IV, Contract and Bonds. It is further understood by the undersigned that such failure will cause substantial injury to the District, including delay in its construction program, which injury is not easily reduced to monetary terms; and it is, therefore, agreed that the amount of the Bidder's Bid security is proper to be considered as liquidated damages for such injury and will be retained by the District in the event of such a failure.

The undersigned Bidder certifies that it is now registered with the Department of Industrial Relations (DIR) to do public work pursuant to California Labor Code Section 1725.5. The District reserves the right to require proof of registration.

The undersigned Bidder acknowledges receipt, understanding, and full consideration of the following Addenda:

ADDENDA NO(S). _____
(Indicate none if no Addenda issued)

BIDDER:

Name of Company

Business Address

Phone

Email

By: _____
Authorized Signature

Date

Name: _____
Print

Corporate Number
(if Bidder is a Corporation)

Title: _____

State of Incorporation: _____

(If person executing on behalf of a Corporation is not the President or Vice President, evidence of authority to sign on behalf of Corporation must be attached.)

If Joint Venture

The undersigned certify that they have full authority to sign this Bid on behalf of the Joint Venture named above as Bidder.

Name of Joint Venture

By: _____
Authorized Signature

By: _____
Signature

Name: _____
Print

Name: _____
Print

Title: _____

Title: _____

Date: _____

Date: _____

(Submit statement explaining the nature of the individual entities that comprise the Joint Venture and evidence of authority of individuals who sign this Bid to do so on behalf of the Joint Venture.)

Joint Venture License No.: _____

Date of Expiration: _____

Classification: _____

SECTION 2 – SCHEDULE OF BID

Unit Price Schedule of Prices for Construction of the Eproson Park Sewer Line Replacement, in accordance with the Project Documents. The Bidder shall provide an amount in numbers for each item listed below (see Part II, Instructions to Bidders). Failure to comply with these requirements may be grounds for finding the bid nonresponsive.

Item No.	Description	Quantity	Unit	Unit Price	Total Price
1	MOBILIZATION/DEMobilIZATION for the lump-sum (LS) price of	1	LS	\$_____	\$_____
2	CLEARING AND GRUBBING for the lump-sum (LS) price of	1	LS	\$_____	\$_____
3	RECONNECT EXISTING LATERALS for the per each (EA) price of	2	EA	\$_____	\$_____
4	CONNECT TO EXISTING MANHOLES for the per each (EA) price of	2	EA	\$_____	\$_____
5	8" SEWER LINE - PVC SDR-35 for the per linear foot (LF) price of	233	LS	\$_____	\$_____
6	12" STEEL PIPE SLEEVE for the per linear foot (LF) price of	20	LF	\$_____	\$_____
7	DEWATERING for the lump-sum (LS) price of	1	LS	\$_____	\$_____
8	SEWER BYPASS PUMPING for the lump-sum (LS) price of	1	LS	\$_____	\$_____

\$ _____
TOTAL BID IN NUMBERS

TOTAL BID IN WORDS

Note: Bidder must initial ALL changes in Schedule of Bid.

SECTION 3 – BIDDER’S LICENSE CERTIFICATION AND DEPARTMENT OF INDUSTRIAL RELATIONS REGISTRATION

Pursuant to the Business and Professions Code of the State of California, Section 7030:

"Contractors are required by law to be licensed and regulated by the Contractor's State License Board. Any questions concerning a contractor may be referred to the Registrar, Contractor's State License Board, 3132 Bradshaw Road, Sacramento, California, Mailing Address: P.O. Box 26000, Sacramento, California 95826."

By executing its bid, Bidder certifies that it is now licensed in accordance with the provisions of the Contractor's License Law of the State of California, and license information is as follows:

License Number: _____

License Classification: _____

License Expiration: _____

Pursuant to California Labor Code section 1725.5, a contractor shall be registered to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any public work contract.

By executing its bid, Bidder certifies that it is now registered in accordance with the provisions of California Labor Code section 1725.5, and has received the following number:

DIR Registration Number: _____

SECTION 4 – BIDDER’S STATEMENT OF SUBCONTRACTORS

The undersigned Bidder submits herewith a list of subcontractors the Bidder proposes to employ on the work. Said subcontractors will each perform work in an amount greater than one half of one percent (½%) of the total bid. This list shall include the proper firm name, their license number and class, their DIR registration number, city and state of each subcontractor, and the portion of the work to be done by each subcontractor with the understanding that failure to name such subcontractors shall be witness that the Contractor shall have agreed to perform such portion of the work; and that the Contractor shall not subcontract said portion of the work; and if a subcontractor is listed, there shall be no substitution of that subcontractor without first obtaining written permission of the District Board of Directors pursuant to the provisions of Section 4107 of the Public Contract Code. The Contractor shall list only one subcontractor for each portion of the work to be done as defined by the Contract.

Portion of Work to be Done	Subcontractor Name	Contractor License Number	DIR Registration Number	Place of Business (City/State)

SECTION 5 – NONCOLLUSION DECLARATION TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

State of California)
) ss.
County of _____)

_____, being first duly sworn, deposes and says that he or she is _____ of _____, the party making the foregoing Bid that the Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the Contract of anyone interested in the proposed Contract; that all statements contained in the Bid are true; and, further, that 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, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

By: _____
Authorized Signature

Name: _____
Print

Company

Date

SECTION 9 - BIDDER'S BOND

We, _____, as Principal, and _____, as Surety, are firmly held and bound unto the Twain Harte Community Service District, a community services district organized and existing under the laws of the State of California, sometimes referred to as the District, in the sum of \$_____ (which is a sum not less than ten percent (10%) of the amount of the accompanying Bid total) for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, WHEREAS, the Principal has submitted to the District the accompanying Bid under a public Notice to Contractors Inviting Sealed Bids for District Project Eproson Park Sewer Line Replacement Project, at 22901 Meadow Drive, Twain Harte, CA.

NOW, THEREFORE, if the accompanying Bid of the Principal is accepted and award be made by the District to the Principal; and if the Principal withdraws said Bid within the period specified in said Bid during which period said Bid cannot be withdrawn, or if the Principal shall fail, refuse, or neglect for any reason whatsoever within five (5) days after receipt from the District of Notice of Award of the Contract to enter into the Contract with the District in accordance with the Principal's Bid and the Instructions to Bidders for said Project, and to give bond with good and sufficient surety, and to furnish the insurance certificates and endorsements as stated in said Bid and the Instructions to Bidders for said Project, then the sum guaranteed by this Bond is forfeited to the District.

It is agreed between Principal and Surety that such failure or neglect would result in injury to District, which is impracticable or extremely difficult to fix, and that such sum is considered by Principal and Surety as liquidated damages for such injury.

In the event suit is brought upon this Bond by the District and judgment is recovered, the Surety or Sureties shall pay all costs incurred by the District in such suit, including attorneys' fees to be fixed by the court.

Date

Company Name

Principal (Authorized Signature)

Business Address

City

State

ACKNOWLEDGEMENT OF PRINCIPAL'S SIGNATURE:

<p>A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.</p>	
<p>State of California } County of _____ } ss</p> <p>On _____ before me _____, a Notary Public, personally appeared _____ Name(s) of Signer(s)</p>	<p>CAPACITY CLAIMED BY SIGNER</p> <p><input type="checkbox"/> INDIVIDUAL(S)</p> <p><input type="checkbox"/> CORPORATE OFFICER(S)</p> <p>_____ Title(s)</p>
<p>who proved to me on basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument, the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.</p> <p>I certify under PENALTY AND PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.</p> <p>WITNESS my hand and official seal</p> <p>_____ Signature of Notary</p>	<p><input type="checkbox"/> PARTNER(S)</p> <p><input type="checkbox"/> ATTORNEY-IN-FACT</p> <p><input type="checkbox"/> TRUSTEE(S)</p> <p><input type="checkbox"/> OTHER _____ Describe</p> <p><input type="checkbox"/> SUBSCRIBING WITNESS (for)</p> <p>_____ _____ _____</p> <p>SIGNER IS REPRESENTING:</p> <p>Name(s) of Person(s) or Entity(ies)</p> <p>_____ _____ _____</p>

Date

Company Name

Surety (Authorized Signature)

Business Address

City

State

ACKNOWLEDGEMENT OF SURETY'S SIGNATURE:

<p>A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.</p>	
<p>State of California } County of _____ } ss</p>	<p>CAPACITY CLAIMED BY SIGNER</p> <p><input type="checkbox"/> INDIVIDUAL(S)</p> <p><input type="checkbox"/> CORPORATE OFFICER(S)</p> <p>_____ Title(s)</p> <p><input type="checkbox"/> PARTNER(S)</p> <p><input type="checkbox"/> ATTORNEY-IN-FACT</p> <p><input type="checkbox"/> TRUSTEE(S)</p> <p><input type="checkbox"/> OTHER _____ Describe</p> <p><input type="checkbox"/> SUBSCRIBING WITNESS (for)</p> <p>_____ _____ _____</p> <p>SIGNER IS REPRESENTING:</p> <p>Name(s) of Person(s) or Entity(ies)</p> <p>_____ _____ _____</p>
<p>On _____ before me _____, a Notary Public, personally appeared _____ Name(s) of Signer(s)</p> <hr/> <p>who proved to me on basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument, the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.</p> <p>I certify under PENALTY AND PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.</p> <p>WITNESS my hand and official seal</p> <p>_____ Signature of Notary</p>	

PART IV CONTRACT AND BONDS

INDEX

Section Title

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| 1 | Contract |
| 2 | Performance Bond |
| 3 | Payment Bond |
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**PART IV
CONTRACT AND BONDS**

SECTION 1 – CONTRACT

This Contract is entered into as of the _____ day of _____, 2018, between _____ (Contractor) and the Twain Harte Community Services District (District). For and in consideration of the payment to be made to Contractor, as hereinafter provided, Contractor shall perform all work specified below in accordance with all the provisions of the Contract, consisting of the following documents, which comprise the entire agreement between the District and Contractor, concerning the work, herein:

- Part I – Notice Inviting Informal Bids
- Part II – Instructions to Bidders
- Part III – Bid Forms
- Part IV – Contract and Bonds
- Part V – General Conditions
- Part VI – Special Conditions
- Part VII – Technical Specifications
- Part VIII – Drawings

1. **WORK TO BE PERFORMED:** Except as specified elsewhere in this Contract, Contractor shall furnish all plant, labor, materials, chemicals, tools, supplies, equipment, transportation, technical and professional services and supervision, and to perform all operations necessary and required to satisfactorily perform the work specified herein; all in accordance with the specifications contained herein.
2. **COMPENSATION:** As full consideration for satisfactory performance by Contractor of this Contract, the District will pay Contractor compensation in an amount not to exceed \$ _____ in accordance with the prices set forth in Section 2, Schedule of Bid, of Part III, Bid Forms, and with the payment provisions of this Contract.
3. **TIME OF PERFORMANCE:** Time is of the essence for this Contract. Contractor agrees to substantially complete all work by **November 3, 2018**.
4. **AUTHORIZATION:** Both the District and Contractor do covenant that each individual executing this document by and on behalf of each part is a person duly authorized to execute contracts for that party.
5. **REPORTING REQUIREMENTS:** If Contractor is an individual or sole proprietor, Contractor must furnish its Social Security Number (SSN). If Contractor is a corporation or partnership, Contractor must furnish its Federal Employer Identification Number (FEIN). Complete the Taxpayer I.D. Number section below. If the work under this contract is subject to the payment of prevailing wages, Contractor must furnish its Department of Industrial Relations registration number.
6. **LIQUIDATED DAMAGES:** Contractor agrees to pay liquidated damages to the District at the rate of \$250 per calendar day under conditions defined in Part V, General Conditions, SC-15 Liquidated Damages.

In witness whereof, the District and Contractor have executed this Contract on the date first above written.

CONTRACTOR NAME

Street Address

City, State and Zip

Phone Number

By: _____

Name Printed: _____

Title: _____

Date: _____

DIR registration: _____

Taxpayer I.D:

SSN _____ - _____ - _____

FEIN _____ - _____ - _____

TWAIN HARTE COMMUNITY SERVICES DISTRICT:

By: _____

Title: _____

Date: _____

ATTEST:

By: _____

Title: _____

SECTION 2 – PERFORMANCE BOND

We, _____, as Principal, and _____, as Surety, are jointly and severally held and bound unto the Twain Harte Community Services District, organized and existing under the laws of the State of California, sometimes referred to as the District, in the sum of _____ Dollars (\$_____) for the payment of which we jointly and severally bind ourselves, our heirs, executors, administrators and assigns, and successors and assigns, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, on the _____ day of _____, the said _____, Principal herein, executed a certain Contract with the District, by the terms, conditions, and provisions of which Contract the said _____, Principal herein, agrees to construct Eproson Park Sewer Line Replacement Project, at 22901 Meadow Drive, Twain Harte, CA, all as set forth in said Contract, which Contract as so executed is attached hereto and by reference is incorporated herein and made a part hereof as fully for all purposes as if here set forth at length.

NOW, THEREFORE, if the Principal herein shall faithfully and truly observe and comply with the terms, conditions, and provisions of said Contract in all respects, and shall well and truly and fully do and perform all matters and things undertaken to be performed under said Contract, upon the terms set forth therein, and within the time prescribed therein, and shall indemnify the District against any direct or indirect damages that shall be claimed for injuries to persons or property during the course of any work performed by or on behalf of Principal under said Contract, and until all work under said Contract is accepted and for an additional period of one (1) year after completion and acceptance of said work by the District, and shall apply all laborers, mechanics, subcontractors, materialmen, and all persons who shall supply such Contractor or subcontractor with services or supplies for carrying on such work, and shall perform said Contract according to laws, and shall complete in a satisfactory manner all repairs or replacements resulting from or caused by defective materials and/or faulty workmanship in the prosecution of the work during the one-year warranty period, then this obligation shall be void, otherwise it shall remain in full force and effect. No prepayment or delay in payment and no change, extension, addition, or alteration of any provision of said Contract agreed to between the Principal and the District, and no forbearance on the part of the District, shall operate to relieve any Surety from liability on this Bond, and consent to make such changes, extension, additions, and alterations without further notice to or consent by any Surety is hereby given.

In the event suit is brought upon this Bond by the District and judgment is entered in its favor, the Surety or Sureties shall pay all costs incurred by the District in such suit, including attorneys' fees to be fixed by the court.

Date

Company Name

Principal (Authorized Signature)

Business Address

City

State

ACKNOWLEDGEMENT OF PRINCIPAL'S SIGNATURE:

<p>A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.</p>	
<p>State of California } County of _____ } ss</p> <p>On _____ before me _____, a Notary Public, personally appeared _____ Name(s) of Signer(s)</p>	<p>CAPACITY CLAIMED BY SIGNER</p> <p><input type="checkbox"/> INDIVIDUAL(S)</p> <p><input type="checkbox"/> CORPORATE OFFICER(S) _____ Title(s)</p> <p><input type="checkbox"/> PARTNER(S)</p> <p><input type="checkbox"/> ATTORNEY-IN-FACT</p> <p><input type="checkbox"/> TRUSTEE(S)</p> <p><input type="checkbox"/> OTHER _____ Describe</p> <p><input type="checkbox"/> SUBSCRIBING WITNESS (for) _____ _____</p>
<p>who proved to me on basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument, the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.</p>	
<p>I certify under PENALTY AND PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.</p>	
<p>WITNESS my hand and official seal</p>	
<p>_____ Signature of Notary</p>	<p>SIGNER IS REPRESENTING: Name(s) of Person(s) or Entity(ies) _____ _____ _____</p>

Date

Company Name

Surety (Authorized Signature)

Business Address

City

State

ACKNOWLEDGEMENT OF SURETY'S SIGNATURE:

<p>A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.</p>	
<p>State of California } County of _____ } ss</p>	<p align="center">CAPACITY CLAIMED BY SIGNER</p> <p><input type="checkbox"/> INDIVIDUAL(S)</p> <p><input type="checkbox"/> CORPORATE OFFICER(S)</p> <p>_____</p> <p align="center">Title(s)</p> <p><input type="checkbox"/> PARTNER(S)</p> <p><input type="checkbox"/> ATTORNEY-IN-FACT</p> <p><input type="checkbox"/> TRUSTEE(S)</p> <p><input type="checkbox"/> OTHER _____</p> <p align="center">Describe</p> <p><input type="checkbox"/> SUBSCRIBING WITNESS (for)</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p>On _____ before me _____, a Notary Public, personally appeared _____</p> <p align="center">Name(s) of Signer(s)</p>	
<p>who proved to me on basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument, the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.</p>	
<p>I certify under PENALTY AND PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.</p>	
<p align="center">WITNESS my hand and official seal</p> <p>_____</p> <p align="center">Signature of Notary</p>	<p align="center">SIGNER IS REPRESENTING:</p> <p>Name(s) of Person(s) or Entity(ies)</p> <p>_____</p> <p>_____</p> <p>_____</p>

SECTION 3 – PAYMENT BOND

We, _____, as Principal, and _____, as Surety, are jointly and severally held and bound unto the Twain Harte Community Services District, organized and existing under the laws of the State of California, sometimes referred to as the District, in the sum of _____ Dollars (\$_____) for the payment of which we jointly and severally bind ourselves, our heirs, executors, administrators and assigns, and successors and assigns, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, on the _____ day of _____, the said _____, Principal herein, executed a certain Contract with the District, by the terms, conditions, and provisions of which Contract the said _____, Principal herein, agrees to construct Eproson Park Sewer Line Replacement Project, at 22901 Meadow Drive, Twain Harte, CA, all as set forth in said Contract, which Contract as so executed is attached hereto, and by reference is incorporated herein and made a part hereof as fully for all purposes as if here set forth at length.

AND WHEREAS, said Contractor is required by the provisions of Chapter 7, Title 15, Sections 3247 through 3252, California Civil Code, to furnish a bond in connection with said Contract, as hereinafter set forth.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Contractor, its heirs, executors, administrators, successors, or assigns, or subcontractors, shall fail to pay any of the persons named in Sections 3110, 3111, and 3112 of the California Civil Code, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or for any amount required to be deducted, withheld, and paid over to the California Franchise Tax Board from the wages and employees of the Contractor and its subcontractors pursuant to Section 18806 of the California Revenue and Taxation Code, with respect to such Contract and warranty work and labor that the Surety or Sureties will pay for the same, in an amount not exceeding the sum specified in this Bond, and also, in case suit is brought upon the Bond, a reasonable attorney's fee, to be fixed by the court.

This Bond shall inure to the benefit of any and all of the persons named in Sections 3110, 3111, and 3112 of the California Civil Code as to give a right of action to such persons or their assigns in any suit brought upon this Bond in accordance with said Sections 3247 through 3252 of the California Civil Code.

In the event suit is brought upon this Bond and judgment is recovered, the Surety shall pay all costs incurred by the District in such suit, including reasonable attorney's fees to be fixed by the court.

No prepayment or delay in payment and no change, extension, addition, or alteration of any provision of said Contract agreed to between the Contractor and the District, and no forbearance on the part of the District, shall operate to relieve any Surety from liability of this Bond, and consent to make such changes, extensions, additions, and alterations without further notice to or consent by such Surety is hereby given.

Date

Company Name

Principal (Authorized Signature)

Business Address

City

State

ACKNOWLEDGEMENT OF PRINCIPAL'S SIGNATURE:

<p>A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.</p>	
<p>State of California } County of _____ } ss</p> <p>On _____ before me _____, a Notary Public, personally appeared _____ Name(s) of Signer(s)</p>	<p>CAPACITY CLAIMED BY SIGNER</p> <p><input type="checkbox"/> INDIVIDUAL(S)</p> <p><input type="checkbox"/> CORPORATE OFFICER(S) _____ Title(s)</p> <p><input type="checkbox"/> PARTNER(S)</p> <p><input type="checkbox"/> ATTORNEY-IN-FACT</p> <p><input type="checkbox"/> TRUSTEE(S)</p> <p><input type="checkbox"/> OTHER _____ Describe</p> <p><input type="checkbox"/> SUBSCRIBING WITNESS (for) _____ _____</p>
<p>who proved to me on basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument, the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.</p> <p>I certify under PENALTY AND PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.</p> <p>WITNESS my hand and official seal</p> <p>_____ Signature of Notary</p>	<p>SIGNER IS REPRESENTING:</p> <p>Name(s) of Person(s) or Entity(ies) _____ _____ _____</p>

Date

Company Name

Surety (Authorized Signature)

Business Address

City

State

ACKNOWLEDGEMENT OF SURETY'S SIGNATURE:

<p>A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.</p>	
<p>State of California } County of _____ } ss</p> <p>On _____ before me _____, a Notary Public, personally appeared _____ Name(s) of Signer(s)</p>	<p>CAPACITY CLAIMED BY SIGNER</p> <p><input type="checkbox"/> INDIVIDUAL(S) <input type="checkbox"/> CORPORATE OFFICER(S) _____ Title(s)</p> <p><input type="checkbox"/> PARTNER(S) <input type="checkbox"/> ATTORNEY-IN-FACT <input type="checkbox"/> TRUSTEE(S) <input type="checkbox"/> OTHER _____ Describe</p> <p><input type="checkbox"/> SUBSCRIBING WITNESS (for) _____ _____ _____</p>
<p>who proved to me on basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument, the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.</p> <p>I certify under PENALTY AND PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.</p> <p>WITNESS my hand and official seal</p> <p>_____ Signature of Notary</p>	<p>SIGNER IS REPRESENTING:</p> <p>Name(s) of Person(s) or Entity(ies)</p> <p>_____ _____ _____</p>

SECTION 5 – WORKERS' COMPENSATION CERTIFICATION

AS REQUIRED BY SECTIONS 1861 OF THE CALIFORNIA LABOR CODE

I am aware of the provisions of Section 3700 of the California 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 the California Labor Code, and I will comply with such provisions before commencing the performance of the work of this Contract for District Project 300-57-0001, Eproson Park Sewer Line Replacement Project.

Contractor: _____

By: _____

Title: _____

Date: _____

PART V GENERAL CONDITIONS

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**PART V
GENERAL CONDITIONS**

GC-1 ENTIRE AGREEMENT

This Contract embodies the entire agreement between the District and Contractor. The parties shall not be bound by or be liable for any statement, representation, promise, inducement, or understanding of any kind or nature not set forth herein. No changes, amendments, or modifications of any of the terms or conditions of the Contract shall be valid unless reduced to writing and signed by both parties.

GC-2 INDEPENDENT CONTRACTOR

Contractor represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized, and financed to perform such work. Contractor shall act as an independent contractor and not as the agent of the District in performing the Contract, maintaining complete control over its employees and all of its subcontractors. Nothing contained in this Contract or any subcontract awarded by Contractor shall create any contractual relationship between any such subcontractor and the District. Contractor shall perform all work in accordance with its own methods subject to compliance with the Contract.

Contractor shall employ only competent and skilled personnel to perform the work. Contractor shall, if requested to do so by the District in writing, remove from the jobsite any personnel of Contractor. Contractor is responsible for maintaining satisfactory conduct of its employees and those of its subcontractors and maintaining labor relations in such manner as shall provide for harmony among the workers.

Contractor shall comply with and shall cooperate with the District in enforcing jobsite conditions which affect the performance of the work including but not limited to starting and quitting time, smoking regulations, check-in and check-out procedures, jobsite safety regulations, and daily clean-up.

GC-3 AUTHORIZED REPRESENTATIVES

Before starting work, Contractor shall designate a competent, authorized representative acceptable to the District to represent and act for Contractor and shall inform the District in writing of the name and address of such representative together with a clear definition of the scope of his/her authority to represent and act for Contractor and shall specify any and all limitations of such authority. Contractor shall keep District informed of any subsequent changes in the foregoing. All notices, determinations, instructions, and other communications given to the authorized representative by the District shall be binding upon Contractor.

GC-4 NOTICES

Any written notice to be given to Contractor by the District, may be delivered in person to Contractor's authorized representative or mailed to the address last given in writing by Contractor.

Notices to District:

Twain Harte Community Services District
P.O. Box 649
Twain Harte, CA 95383

Administrative Representative: Tom Trott, General Manager
Contract No.: 300-57-0001
Telephone: (209) 586-3172

Technical Representative: Jeff Black, P.E. - Engineer
Telephone: (209) 322-1817

GC-5 LAWS

This Contract shall be in accordance with the laws of the state of CALIFORNIA. Parties further stipulate that this Contract was entered into in the state of CALIFORNIA and the state of CALIFORNIA is the only appropriate forum for any litigation as a result of breach hereof or any questions risen herefrom.

Contractor shall keep itself fully informed of, and shall observe and comply with, all laws, ordinances, and regulations which in any manner affect those engaged or employed on any work, or the materials and equipment used in any work, or in any way affect the performance of any work, and of all orders and decrees of agencies having any jurisdiction or authority over work performed under the Contract.

If any discrepancy or inconsistency should be discovered between the Contract and any such law, ordinance, regulation, order, or decree, Contractor shall immediately report the same in writing to the District. Contractor shall be responsible for the compliance by subcontractors of all tiers with the above provisions of this article. Contractor shall post all job site notices as required by law or regulation.

- A. Special attention is directed to Part 7, Chapter 1, Article 2, Sections 1770 et. seq. of the Labor Code of the State of California.

PREVAILING WAGES. Contractor is hereby put on notice that if the Work, as defined in this agreement, is "public work" as that term is defined in California Labor Code section 1720 *et seq.*, the payment of prevailing wages applies to the Work under this Contract, and pursuant to California Labor Code section 1771.4, this contract is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. Contractor is advised to verify with the Department of Industrial Relations as to whether the Work, or the type of worker to be utilized for any portion of the Work has applied to it a classification defined by the Division of Labor Standards Enforcement of the Department of Industrial Relations as one where prevailing wages must be paid. In accordance with California Labor Code Section 1771, not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is to be performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in the California Labor Code must be paid to all workers engaged in performing the Work, if the payment of prevailing wages is required by law. In accordance with California Labor Code Section 1770 and following, the Director of Industrial Relations has determined the general prevailing wage per diem rates for the locality in which any of the Work for which prevailing wages must be paid is to be

performed. In accordance with California Labor Code Section 1773, the District has obtained the general prevailing rate of per diem wages and the general rate for holiday and overtime work in the locality in which any of the Work that is subject to prevailing wage is to be performed for each craft, classification or type of worker needed to perform the Work. In accordance with California Labor Code Section 1773.2, copies of the prevailing rate of per diem wages are on file at the District's offices and will be made available on request. Throughout the performance of the Work the Contractor must comply with all provisions of the Contract Documents and all applicable laws and regulations that apply to wages earned in performance of the Work. If the Work is subject to the payment of prevailing wage, then Contractor shall furnish certified payroll records, as defined and required by California Labor Code section 1776, directly to the Labor Commissioner. Copies of certified payrolls shall be made available to the District upon request.

- B. Labor Discrimination: Attention is directed to Section 1735 of the Labor Code, which reads as follows:

No discrimination shall be made in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code, and every contractor for public works violating this Section is subject to all the penalties imposed for violation of this Chapter.

- C. Contractor shall comply with all applicable federal, state, and local laws, ordinances, rules, and regulations; and lawful orders of all authorities having jurisdiction for the safety of persons and protection of property, more particularly described under Article GC-12 Safety, Sanitary, and Medical Requirements.
- D. Contractor shall comply with Sections 12101 through 12901 of Title 22, California Administrative Code. Contractor shall warn all persons at the work site of their exposure to chemicals known to the state to cause cancer or birth defects or other reproductive harm. Contractor shall be responsible for compliance by its subcontractors with this article.
- E. Contractor stipulates and agrees that pursuant to the provisions of Labor Code, Sections 1810 through 1815, eight (8) hours labor shall constitute a legal day's work, and no worker shall be required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week, except as provided for under Section 1815. Nothing in this provision shall be construed to relate to wage determination or in any way affect contractual provisions related to compensation. The contractor or subcontractor shall, as a penalty to the District, forfeit twenty-five dollars (\$25) for each worker employed in the execution of the contract by the respective contractor or subcontractor for each calendar day during which the 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 the provisions of this article.

Notwithstanding the Labor Code provisions set forth above, pursuant to Labor Code, Section 1815, work performed by employees of Contractor in excess of eight (8) hours per day and forty (40) hours during any one (1) week shall be permitted provided that compensation shall be made for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1-1/2) times the basic rate of pay.

- F. Contractor shall be allowed to substitute securities for any monies withheld to ensure performance under this Contract pursuant to Section 22300 of the California Public Contracts Code.
- G. Contractor shall be licensed under the provisions of Chapter 9, Division 3, of the Business and Professions Code of the State of California to do the type of work contemplated in the Project and shall be skilled and regularly engaged in the general class or type of work called for under the Contract.

GC-6 PERMITS AND TAXES

Contractor shall, unless otherwise provided elsewhere in the Contract, at its expense, obtain all permits and licenses and pay all charges and fees necessary for the performance of the Contract, and shall give all public notices necessary for the lawful performance of the Contract.

Contractor shall pay all taxes, levies, duties, and assessments of every nature due in connection with any work under the Contract, shall make any and all payroll deductions required by law, and shall indemnify and hold harmless the District from any liability on account of any and all such taxes, levies, duties, assessments, and deductions.

GC-7 WAIVER

Neither the inspection by the District, nor any order, measurement, approval, determination, decision, or certificate by the District, nor any order by the District for the payment of money, nor any payment for or use, occupancy, possession, or acceptance of the whole or any part of the work by the District, nor any extension of time, nor any other act or omission of the District shall constitute, or be deemed to be acceptance of any defective or improper work, materials, or equipment nor operate as a waiver of any requirement or provision of the Contract, nor of any remedy, power, or right of or herein reserved to the District nor of any right to damages for breach of Contract. Any and all rights and/or remedies provided for in the Contract are intended and shall be construed to be cumulative; and, in addition to each and every other right and remedy provided for herein or by law, the District shall be entitled, as a right, to a writ or injunction against any breach or threatened breach of the Contract by Contractor, by its subcontractors, or by any other person or persons.

None of the provisions of the Contract shall be considered waived by the District unless such waiver is expressly given in writing by the District. No such waiver shall be a waiver of any past or future default, breach, or modification of any of the terms, provisions, conditions, or covenants of the Contract unless expressly set forth in such waiver.

GC-8 INDEMNITY

Contractor shall indemnify, defend, and hold harmless the District and its officers, agents, servants, employees and any other District representatives, and each of them, from and against any and all suits, actions, legal or administrative proceedings, claims, demands, consequential damages, liabilities, interest, attorneys' fees, costs and expenses of whatsoever kind or nature whether arising before or after final acceptance of the work hereunder and in any manner directly or indirectly caused, occasioned, or contributed to or claimed to be caused, occasioned, or contributed to in whole or in part by reason of any act, omission, fault, or negligence whether active or passive of Contractor, or of anyone acting under its direction, control, or on its behalf

including subcontractors in connection with or incident to the performance of this Contract without limiting the generality of the foregoing, the same shall include injury to or death of any person or persons and damage to any property, regardless of where located, including without limitation the property of the District, Contractor's employees, and all other persons. Contractor's aforesaid indemnity and hold harmless agreement shall not be applicable to any liability caused by the active negligence or willful misconduct of the District or its officers, agents or employees.

Contractor shall include in each agreement with each of its subcontractors at all tiers, a provision requiring that the subcontractor indemnify the District as stated in this Article.

GC-9 SUBCONTRACTS AND ASSIGNMENTS

No subcontract shall be entered into and Contractor shall not substitute any person as subcontractor in place of a subcontractor so listed in the Contract provided that the District, at its discretion, may consent to a subcontractor substitution if (1) the subcontractor listed fails or refuses to execute a written contract, or (2) the substitution is otherwise necessary to the efficient construction of the work. In either case, Contractor shall obtain the District's prior written consent. No subcontracts at any tier shall relieve Contractor of any of its liabilities or obligations under the Contract, and Contractor agrees that it is fully responsible to the District for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by them in the performance of the Contract. Contractor shall assure that each subcontractor at all tiers fully complies with the provisions of any applicable Worker's Compensation Act or similar law having application to subcontractor's employees. Failure of Contractor or any of its subcontractors to comply with this provision will be considered as grounds for termination of the Contract at Contractor's expense in accordance with Article GC-10 TERMINATION OF RIGHT TO PROCEED.

Nothing contained in the Contract shall create any contractual relationship between any subcontractor and the District.

Any assignment of the performance of this Contract without prior written consent of the District shall be voidable. Consent will not be given to any proposed assignment which would relieve the original Contractor or its Surety of their responsibilities under the Contract. Contractor may assign monies due or to become due it under the Contract, to the extent permitted by law, and such assignment will be recognized by the District, if written notice thereof is given to the District at least ten (10) working days before a payment is due, but any assignment of monies shall be subject to all proper set-offs in favor of the District and to all deductions or retentions provided for in the Contract and particularly all money withheld, whether assigned or not, shall be subject to being used by the District for the completion of the work in the event that Contractor should be in default therein or for the payment of claims or liens.

GC-10 TERMINATION OF RIGHT TO PROCEED

If Contractor should refuse or fail, except in cases for which extension of time is provided, to supply enough properly skilled workers, proper equipment and proper appliances or proper materials, or if it should fail to make prompt payments to subcontractors or for material or labor, or disregard laws, ordinances, or the instructions of the District, or otherwise be guilty of a substantial violation of any provision of this Contract, then the District may without prejudice to any other right or remedy, serve written notice upon Contractor and Surety, if any, of the District's intention to terminate the performance of Contractor, such notices to contain the

reasons for such termination, and unless within seven (7) calendar days after the serving of such notice upon Contractor and Surety, if any, such cause shall cease and satisfactory arrangement for correction shall be made, the performance of Contractor shall cease and terminate. In the event of any such termination, or should Contractor be adjudged as bankrupt, or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, the District shall serve notice thereof upon Contractor and Surety, if any, and the Surety shall have the right to perform the Contract; provided, however, that if the Surety does not commence performance thereof within seven (7) calendar days from the date of service of notice of termination upon the Surety, the District may take possession of the premises and of all materials, tools, equipment, and appliances thereon and finish the work by whatever method the District may deem expedient. In such case, Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to Contractor. If such expense shall exceed such unpaid balance, Contractor and Surety, if any, shall pay the difference to the District. The expense incurred by the District as herein provided, and the damage incurred through Contractor's default, shall be certified by the District. Service of any notices hereunder shall be deemed complete upon the deposit in the United States mail, postage prepaid, addressed to the address of Contractor and Surety, if any, as shown on records on file with the District.

Said termination shall be without prejudice to any other remedies available to the District.

Upon receipt of any such written notice of termination of right to proceed, Contractor shall, at its expense, for that work affected by any such termination:

- A. Assist the District in making an inventory of all materials and equipment in storage at the site, enroute to the site, and on order from suppliers.
- B. Assign to the District subcontracts, supply contracts, and equipment rental agreements all as designated by the District.
- C. Remove from the site all construction materials, equipment, and plant listed in said inventory other than such construction materials, equipment, and plant which are designated in writing by the District to be used by the District in completing such work.

GC-11 OPTIONAL TERMINATION

Including, but not limited to, provisions for termination in the event of national emergency under Section 4410 et. seq. of the Government Code of the State of California, the District may, at its option, cancel and terminate the Contract in whole or in part at any time by written notice thereof to Contractor, whether or not Contractor is in default.

Upon any such cancellation and termination, Contractor shall waive any claims for damages, including loss of anticipated profits, on account thereof, but as the sole right and remedy of Contractor and the District, the District shall pay Contractor in accordance with subparagraph B., below, provided, however, that the provisions of the Contract, which by their very nature survive final acceptance under the Contract, shall remain in full force and effect after such cancellation and termination to the extent provided in such provisions.

- A. Upon receipt of any such notice, Contractor shall, unless the notice requires otherwise:

1. Immediately discontinue work on the date and to the extent specified in the notice.
 2. Place no further orders or subcontracts for materials, services, or facilities, other than as may be necessary or required for completion of such portion of work under the Contract that is not terminated.
 3. Promptly make every reasonable effort to obtain cancellation upon terms satisfactory to the District of all orders and subcontracts to the extent they relate to the performance of work terminated.
 4. Assist the District as specifically requested, in writing, in the maintenance, protection, and disposition of property acquired by the District under the Contract.
- B. Upon any such termination, the District will pay to Contractor an amount determined in accordance with the following (without duplication of any item):
1. All amounts due and not previously paid to Contractor for work completed in accordance with the Contract prior to such notice, and for work thereafter completed as specified in such notice.
 2. The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in subparagraph A.3., above.
 3. The reasonable costs incurred pursuant to subparagraph A.4., above.
 4. Any other reasonable costs incidental to such termination of work.
 5. The foregoing amounts shall include a reasonable sum, under all of the circumstances, as profit for any work performed by Contractor.

GC-12 SAFETY, SANITARY, AND MEDICAL REQUIREMENTS

In accordance with generally accepted construction practices and state law, Contractor shall be solely and completely responsible for conditions on the jobsite, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.

Contractor shall take all necessary precautions and provide all necessary safeguards to prevent personal injury and property damage. Contractor shall provide protection for all persons including, but not limited to, its employees and employees of other contractors or subcontractors; members of the public; and employees, agents, and representatives of the District and regulatory agencies that may be on or about the work.

The services of the District in conducting review and inspection of Contractor's performance is not intended to include review of the adequacy of Contractor's work methods, equipment, bracing or scaffolding, or safety measures, in, on, or near the construction site.

Contractor shall take such measures as may be necessary or required to assure that the safety and health of the employees and of the public may be safeguarded.

Contractor shall provide protection for all public and private property including, but not limited to, dams, structures, pipes, and utilities, above and below the ground.

Contractor shall promptly and fully comply with and carry out safety, sanitary, and medical requirements as prescribed by federal, state, or local laws or regulations and industry standards.

All work and materials shall be in strict accordance with all applicable state, city, county, and federal rules, regulations, and codes, and attention is drawn to the requirements of OSHA. Contractor shall be solely responsible for compliance with all city, county, and state explosive transport, storage, and blasting requirements and for any damages caused by its operations.

Contractor is hereby informed that work on this Project could be hazardous. Contractor shall carefully instruct all personnel working in potentially hazardous work areas as to potential dangers and shall provide such necessary safety equipment and instructions as are necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to work underground.

Contractor shall provide and maintain all necessary safety equipment such as fences, barriers, signs, lights, walkways, guards, and fire prevention and fire-fighting equipment and shall take such other action as is required to fulfill its obligations under this article. It is the intent of the District to provide a safe working environment under normal conditions. **HOWEVER, CONTRACTOR IS ADVISED THAT THE NATURE OF THE WORK SPECIFIED HEREIN MAY BE POTENTIALLY HAZARDOUS BECAUSE OF CONDITIONS SUCH AS CONFINED SPACES, POTENTIALLY EXPLOSIVE ATMOSPHERES, AND POSSIBLE EXPOSURE TO PATHOGENS.**

Contractor shall maintain all portions of the jobsite in a neat, clean, and sanitary condition at all times.

Contractor may make use of the District's existing public restrooms located at Eproson Park; however, said facilities will not be available for use from dusk to dawn. If Contractor performs work during that time frame, Contractor shall furnish toilets for use of its employees.

Contractor shall keep adequate first aid facilities and supplies available and instruction in first aid shall be given.

All costs in connection with meeting the requirements of this article shall be borne by Contractor.

GC-13 CHANGES

When changes in the work are required by the District or requested by Contractor, Contractor shall promptly estimate their effect on the cost or time of performance of this Contract and so notify the District. Contractor, if requested by the District, shall supply any information to support Contractor's estimate of cost and/or time. No change shall be implemented by Contractor unless it is approved by the District in writing, and, unless otherwise agreed to in writing, the provisions of this Contract shall apply to all changes in the work. If the District determines that any change materially affects the cost or time of performance of this Contract as a whole, Contractor and the District will mutually agree, in writing, to an equitable adjustment as specified in Part VI, Special Conditions, SC-6, Delays, and SC-7, Extra Work Payment. In

the event of disagreement, the District will fix such adjustment that, in its opinion, be reasonable and proper, regard being had to all material and relevant factors including Contractor's direct costs and overhead. The Contractor may protest terms of such a change order in accordance with SC-3, Procedure and Protest, of Part VII, Special Conditions.

Contract change orders which affect the cost or term of performance shall be processed through the District's designated administrative representative, as shown in Article GC-4 Notices.

GC-14 SURVIVAL

Notwithstanding the District's acceptance of the work and payment, Contractor shall remain obligated under all clauses of this Contract, which expressly or by their nature extend beyond and survive such acceptance and payment or termination.

GC-15 WARRANTY

Contractor warrants that the work performed pursuant to the Contract shall be of the quality specified or of the highest quality if no quality is specified, and shall conform to the specifications, drawings, samples, and other descriptions set forth in the Contract. Contractor warrants all equipment and materials furnished by it and all work performed by it under the Contract against defective design (unless furnished by the District), materials, and workmanship for a period of one (1) year from and after final acceptance regardless of whether the same were furnished or performed by Contractor or by any of its subcontractors or suppliers of any tier. Performance and Payment Bonds, if any, shall remain in full force and effect during such warranty periods.

If, after installation and acceptance, the operation or use of the material or equipment furnished under this Contract proves to be unsatisfactory to the District, the District shall have the right to operate and use such materials and equipment until it can, without damage to the District, be taken out of service for correction or replacement by Contractor at its expense. The warranty period for the materials or equipment which are replaced shall be one (1) year from and after the replacement materials or equipment are satisfactorily installed.

Upon receipt of written notice from the District of any breach of warranty during the applicable warranty period, the affected item shall be redesigned, repaired, or replaced by Contractor and it shall perform such tests as the District may require to verify that such redesign, repairs, and replacement comply with the requirements of the Contract. As to the redesigned, repaired, or replaced work, Contractor warrants such redesigned, repaired, or replaced work against defective design, materials, and workmanship for a period of one (1) year from and after the date of acceptance of such work. The District reserves the right to require that Contractor perform such repair or replacement work.

The District also reserves the right to make such repairs or replacements, if, within seven (7) calendar days after mailing of a notice in writing to Contractor and Surety, if any, Contractor shall neglect to make or undertake with due diligence the aforesaid repairs or replacements and that Surety, if any, within seven (7) calendar days after mailing of a notice in writing of such negligence of Contractor shall neglect to make or undertake with due diligence the aforesaid repairs or replacements itself, provided, however, that in the case of an emergency where in the opinion of the District delay would cause hazard to health or serious loss or damage, repair may be made without notice being sent to Contractor or Surety, and Contractor shall pay the cost thereof.

All costs, including manpower and materials incidental to such redesign, repair, replacement, and testing, including the removal, replacement, and reinstallation of equipment necessary to gain access and all other costs incurred as the result of a breach of warranty shall be borne by Contractor whether performed by the District or Contractor.

Nothing in this section shall be construed to limit, relieve or release Contractor's, subcontractor's, and equipment supplier's liability to the District for damages sustained as the result of latent defects in the equipment furnished caused by the negligence of the supplier's agents, employees or subcontractors.

GC-16 NOT USED

GC-17 PUBLICATIONS

No publications or advertisements concerning the subject matter of the Contract shall at any time be made by or on behalf of Contractor, its subcontractors, or suppliers, unless prior written authorization is obtained from the District. No advertising signs shall be erected at the site of the work.

GC-18 COOPERATION

The area of Contract work will be performed within a public park, a portion of which will remain in use by the public during construction. Contractor must anticipate that its work may be interfered with or suspended from time to time on account of the concurrent use of adjacent public facilities. Contractor shall fully cooperate with public to avoid any delay or hindrance of their work. The Contractor shall propose safety measures to the District to ensure safety of the public, to minimize the possibility of public interference with the Work, and to maximize concurrent use of existing adjacent park facilities.

GC-19 LIENS

If at any time any notices of lien are filed for labor performed or materials or equipment manufactured, furnished, or delivered to or for the work, Contractor shall at its own cost and expense, promptly discharge, remove, or otherwise dispose of the same, and until such discharge, removal, or disposition, the District shall have the right to retain from any monies payable to Contractor an amount which, in the District's sole judgment, it deems necessary to satisfy such liens and pay the costs and expenses, including attorneys' fees, of defending any actions brought to enforce the same, or incurred in connection therewith or by reason thereof.

GC-20 CLEANING UP

Contractor shall, at all times, keep the premises occupied by it and access to such premises in a neat, clean, and safe condition. Upon completion of any portion of any work, Contractor shall promptly remove all of its equipment, temporary structures, and surplus construction and other materials not to be used at or near the same location during later stages of work. Upon completion of any work and before final payment is made, Contractor shall, at its expense, satisfactorily dispose of all plant, buildings, rubbish, unused materials, concrete forms, and other equipment and materials belonging to it or used in the performance of work; and Contractor shall leave the premises in a neat, clean, and safe condition. If Contractor fails to comply with any of the foregoing, the same may be accomplished by the District at Contractor's expense.

PART VI SPECIAL CONDITIONS

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PART VI SPECIAL CONDITIONS

SC-1 INSURANCE

A. Contractor shall, at its expense, procure and maintain insurance provided by insurance companies with an A.M. Best's Insurance Rating of "A:VII" or better on all of its operations under this Contract for the duration of the Project and the warranty period, except for the liability insurance for the Products-Completed Operations Hazard as specified in Subsection A.2, as follows:

1. Workers' Compensation and Employer's Liability Insurance: Workers' Compensation Insurance shall be provided as required by any applicable law or regulation. Employer's Liability Insurance shall be provided in amounts not less than \$1,000,000 per accident, \$1,000,000 per each employee for disease, and \$1,000,000 policy limit.

The insurer shall waive all rights of subrogation against the District, its officers, directors, and employees.

If there is any risk of injury to Contractor's employees under the U.S. Longshoremen's and Harbor Workers' Compensation Act, the Jones Act or under other laws, regulations or statutes applicable to maritime employees, coverage shall be included for such injuries or claims.

2. General Liability Insurance: Contractor shall carry general liability insurance covering all operations by or on behalf of Contractor for the limits of liability indicated in the Special Conditions (Part VI) provisions of this Contract.

Contractor's General Liability Insurance shall be written on an "occurrence" form and provide coverage at least as broad as the most recent version of Insurance Services Office Commercial General Liability form CG 0001. Coverage shall include, or be endorsed to include, coverage for personal injury liability assumed under contract. The policy shall also include liability arising out of the use and operation of any District-furnished equipment by the Contractor, its personnel, and others.

The District, its officers, directors, and employees shall be named as additional insureds on the Contractor's policies by a provision or endorsement providing coverage at least as broad as Insurance Services Office's Additional Insured - Owners, Lessees, or Contractors (Form B) endorsement Number CG 2010 11/85.

The required additional insured coverage for the District shall be primary and specify that any other insurance or self-insurance maintained by the District shall not be called upon to contribute with Contractor's insurance.

Contractor shall maintain liability insurance for the "Products-Completed Operations Hazard" for three (3) years following completion of Contractor's work under this Contract and acceptance by the District. Contractor shall provide

updated Certificates of Insurance to the District during these subsequent three (3) years as evidence of continued coverage.

3. Automobile Liability Insurance: The Contractor shall carry Automobile Liability Insurance at least as broad as the most recent version of Insurance Services Office Business Automobile Liability (form Number CA 0001) on all owned, non-owned, and hired autos, in the amount indicated in Part VI, Special Conditions. The coverage shall remain in force during the warranty period. The policy shall also include liability arising out of the use and operation of District-furnished vehicles by the Contractor, its personnel, and others.

The insurance shall not contain provisions for automatic termination or reduction in coverage should the District make use of or take possession of any completed or partially completed portion of the work performed under this Contract prior to the District's recording of the Notice of Completion.

B. The following provisions shall also apply:

1. Each required insurance policy shall be placed with insurance companies licensed to do business in California that have been rated at least 'A VII' by A. M. Best.
2. Each required insurance policy shall be endorsed to state that coverage shall not be canceled or reduced without thirty (30) days' prior written notice to the DISTRICT. Ten (10) days' notice shall be provided for cancellation for nonpayment of premiums.
3. CONTRACTOR shall furnish the DISTRICT with original, signed certificates and original, signed amendatory endorsements. All such certificates and endorsements shall be received and reviewed by the DISTRICT before any work begins under this agreement. The certificates and amendatory endorsements shall be signed by an individual who is authorized to sign on behalf of the insurer covering the CONTRACTOR.
4. The DISTRICT reserves the right to require complete, certified copies of all required insurance policies at any time.
5. CONTRACTOR shall include all SUBCONTRACTORS as insureds under its policies or shall cause each SUBCONTRACTOR employed by CONTRACTOR to purchase and maintain insurance of the types and limits specified in this section. Upon the DISTRICT's request, CONTRACTOR shall furnish copies of certificates and endorsements evidencing coverage for each SUBCONTRACTOR.
6. All insurance correspondence, notices, certificates, and endorsements shall each separately reference "All DISTRICT Operations" or "All DISTRICT Projects."
7. In the event CONTRACTOR fails to comply with this Section, the DISTRICT may take such action as the DISTRICT deems necessary to protect the DISTRICT's interest. Such action may include but is not limited to termination of the Contract, withholding of payments, or other actions as the DISTRICT deems appropriate.

SC-2 QUESTIONS

If Contractor discovers any errors, omissions, discrepancies, or conflicts in the Contract, it shall immediately so inform the District in writing. The District will promptly respond to such matters and so inform Contractor. Any work which is performed by Contractor subsequent to and affected by such discoveries prior to response from the District shall be at Contractor's risk.

SC-3 PROCEDURE AND PROTEST

A contract change order approved by the District may be issued to Contractor at any time. Should Contractor disagree with any terms or conditions set forth in an approved contract change order which it has not executed, it shall submit a written protest to the District within fifteen (15) days after the receipt of such approved contract change order. The protest shall state the points of disagreement, and, if possible, the Contract specification references, quantities, and costs involved. If a written protest is not submitted, payment will be made as set forth in the approved contract change order, and such payment shall constitute full compensation for all work included therein or required thereby.

SC-4 SUBSTITUTIONS AND EQUAL ALTERNATIVES

The work, unless otherwise permitted or approved by the District, shall be completed with the incorporated use of trade-named materials and equipment where such are specified. Substitutions and equal alternatives will be permitted as provided in this Section; however, neither the request for substitution nor the offer of alternatives shall in any way by their submittal obligate the District to assent to any request or offer. Failure of Contractor to either submit requests for substitutions or to offer alternatives will be considered as evidence that the work shall be accomplished with trade-named materials and equipment as identified in the Technical Specifications.

Except when the specifications prohibit the substitution of a similar or equivalent material or article, Contractor may make written request to the District for approval of the use of alternative equipment or materials. Such request shall contain complete data intended to show that such alternative item is of a quality equal to or better than that specified and has the required characteristics for the intended use. Upon request, Contractor shall furnish to the District such additional information relating to such alternative items as the District may require.

The burden of proof as to the quality and suitability of alternatives shall be upon Contractor, and it shall furnish all necessary information requested and required by the District. The District will be the sole judge as to the quality and suitability of alternative articles or materials, and its decision shall be final.

SC-5 BEGINNING AND PROSECUTION OF THE WORK

Contractor shall be authorized to begin work upon receipt of the Notice to Proceed. Contractor shall diligently prosecute the work to completion within the time of performance provided in the Contract. **All work shall be substantially complete by November 3, 2018.**

Construction hours on the project site shall be limited to 7:00 a.m. to 7:00 p.m., Monday through Saturday. No work shall be performed on Sundays or holidays without prior approval of the District. Sewer bypass operations and dewatering operations may be performed continuously until the sewer line is placed into service.

Contractor shall prosecute the work with sufficient forces, construction plant, and equipment and shall work such hours, including extra shifts and overtime operations as may be necessary to ensure the completion of the work in accordance with the construction schedule and specified time of performance.

Contractor shall notify the District in writing of its intent to begin work at least two working days before work is actually begun. Contractor shall also promptly notify the District of any Contractor-initiated suspensions and resumptions of work during the contract period, allowing as much advance warning as possible. The notice to resume work shall be given to the District not less than one working day in advance of resuming work.

SC-6 DELAYS

Unavoidable delays in the prosecution or completion of the controlling item of work shall include Acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, labor disputes, freight embargoes, other delays which may result through causes beyond the reasonable control of Contractor, and delays which could not have been provided against by the exercise of care, prudence, foresight, and diligence. Orders issued by the District changing the amount of work to be done, the quantity of material to be furnished, or the manner in which the work is to be prosecuted, and unforeseen delays in the completion of necessary work by others not under Contractor's control shall also be considered unavoidable delays, so far as they necessarily interfere with Contractor's completion of the whole of the work. Delays due to adverse weather conditions will not be regarded as unavoidable delays unless so recognized in writing by the District.

Written notice shall be filed with the District by Contractor within five (5) calendar days after any occurrence which may lead to an unavoidable delay to the work. Failure to file such notice and an explanation shall negate any consideration for extension of time provided under this subsection. Reasonable compensation for actual losses and a commensurate extension of time due to unavoidable delays will be considered by the District provided written notice has been filed.

SC-7 EXTRA WORK PAYMENT

District may, at any time, by written change order make changes in the work, or extend the time to complete the work, as deemed necessary by District. If such changes cause an increase or decrease in Contractor's cost of, or time required for, performance of this Contract, there shall be an equitable adjustment in the payment price. The price adjustment shall be determined by one of the following methods in the order of precedence listed:

- A. Based on the unit prices contained in Section 2, Schedule of Bid, Part III, Bid Forms.
- B. Mutually agreed-upon lump sum or unit price adjustment.
- C. Contractor's actual cost of labor (wages and benefits), materials (actual purchase price, sales tax, freight and delivery) and equipment/tools (at actual or fair/prevaling rental rates) directly engaged in the performance of the extra work plus a fifteen percent (15%) mark-up for overhead and profit. For price adjustments under this section, Contractor shall provide to District an itemized breakdown of the quantities and prices used in the extra work, and it shall make available all source documents,

including payroll records, invoices, purchase orders, contracts and lease agreements.

The total payment made as provided above shall be deemed to be the actual cost of such work, including overhead costs, and shall constitute full compensation therefore.

When extra work is performed by subcontractor forces, Contractor shall reach agreement with such other forces as to the distribution of the payment made by the District for such work. No additional payment will be made by the District by reason of the performance of the work by a subcontractor.

SC-8 PAYMENTS

Contractor will be paid within thirty (30) calendar days after the District receives the invoice(s) and all required supporting documentation. Payment will be made by the District provided that the work is satisfactory and accepted by the District and that the contract is free of all liens and encumbrances.

Contractor's attention is directed to Section 01280, Measurement and Payment, of Part VII, Technical Specifications, for basis for payment and other payment information.

The District will retain five percent (5%) of the invoiced work done as part security for the fulfillment of the Contract by Contractor.

Contractor may elect to have funds which the District would otherwise withhold from progress payments deposited in an escrow account in accordance with Section 22300 of the California Public Contracts Code. Contractor shall make a written request to the District.

SC-9 SUBSTANTIAL COMPLETION AND FINAL INSPECTION

When construction is sufficiently complete in accordance with the Contract so that the District can occupy or utilize the work, or designated a part thereof for the use for which it is intended, and when Contractor has furnished the "as-built" drawings, operations and maintenance manuals, test and compliance certificates, equipment and system warranties, and all other documents required by the Contract, the work will be considered substantially complete.

This project will be considered substantially complete prior to the full establishment of vegetation required for landscape restoration, so long as landscape restoration activities have been performed.

At the time of substantial completion of the work, Contractor shall notify the District in writing. Upon receipt of Contractor's notification, the District will make the final inspection of the work. If any discrepancies are discovered by the District during final inspection of the work or inspection of the required documents, a "punch list" noting the deficiencies will be transmitted to Contractor for correction. Upon completion of the corrective work or additional document submittal by Contractor, Contractor shall notify the District. The District will reinspect the corrected work and examine any documents submitted. If the District determines that all work is completed and that all other requirements of the Contract have been met, the District will recommend acceptance of the Contract work to the District Board of Directors.

SC-10 ACCEPTANCE OF CONTRACT WORK

When the District has made the final inspection and determines that the contract work and production of documents has been completed in all respects in accordance with the plans and specifications, the District will proceed to formally accept the contract work.

At a regular meeting following the District's recommendation, Board action will be taken. If the Board concurs with the District's recommendation, the contract work will be accepted. Immediately upon and after such acceptance by the District, Contractor will be relieved of the duty of maintaining and protecting the work as a whole and will not be required to perform any further work thereon, except work required by the warranty terms and conditions of the Contract.

Additionally, upon formal Board acceptance of the work, a Notice of Completion will be filed in accordance with Section 4005 of the State of California Government Code. If no claims are filed against the Contract for a period of thirty five (35) days following filing by District, final payment will be made.

SC-11 DISPOSAL OF MATERIAL

Existing materials and equipment to be demolished, removed, and disposed as noted on the drawings and all trash such as broken concrete, wood blocking, shipping containers, etc., resulting from the Contract work shall be disposed off District property at Contractor's expense. District-leased dumpsters and other disposal containers on the District's property shall not be used by Contractor.

SC-12 DUST CONTROL

Contractor, for the duration of the Contract, shall maintain all work areas within Contract work limits free from dust, as determined by the District. Industry-accepted methods of dust control, suitable for the area involved, will be permitted. No separate payment will be made to Contractor for dust control.

SC-13 PROTECTION AND RESTORATION OF PROPERTY

Project work will occur on District property and private property. Contractor shall take all measures necessary to protect all existing facilities, including but not limited to the District's park facilities, buildings, retaining walls, hardscape, landscape, fencing, trees, irrigation, utilities and all private property. Damage to any property or facilities resulting from Contract work shall be repaired by the Contractor to its original condition (or better), at its sole cost.

Contractor shall take extra precautions to protect existing culverts and storm drain pipes in place within and near the Contractor's excavation. Tuolumne County has stated that the flowline of said culverts is corroded and may have holes. Where culverts convey stream flows, Contractor shall set up temporary measures to convey flows through the culvert without risking accidental diversion of creek flows into trench excavations. All temporary measures shall be installed and removed without disturbing the creek channel, by "slipping" the culvert with temporary pipe and sandbags. All work shall be set inside the existing pipe and installed under the inspection of a District representative. Temporary workings shall be removed by the Contractor before project completion. The material and temporary piping shall be submitted to the District for approval prior to installation

In as much as it is reasonably possible, Contractor, at its sole cost, shall restore the work area affected by Project work to its condition prior to construction.

If needed for safety and security, Contractor, at its cost, shall construct temporary fencing to prevent unauthorized access to the work area. Contractor shall restore or replace any existing permanent fencing affected by Contract work.

The area of Contract work will be performed within a public park, a portion of which will remain in use by the public during construction. The Contractor shall implement safety measures to protect use of the park areas outside of the Contractor's work area to ensure safety of the public, to minimize the possibility of public interference with the Work, and to maximize concurrent use of existing adjacent park facilities.

SC-14 USE OF COMPLETED PORTIONS OF WORK

Whenever, as determined by the District, any portion of work performed by Contractor is in a condition suitable for use, the District may take possession of or use such portion.

Such use by the District will in no case be construed as constituting final acceptance and shall neither relieve Contractor of any of its responsibilities under the Contract, nor act as a waiver by the District of any of the conditions thereof, provided that Contractor shall not be liable for the cost of repairs, rework, or renewals which may be required due to ordinary wear and tear resulting from such use. However, if such use increases the cost or delays the completion of remaining portions of work, Contractor shall be entitled to an equitable adjustment.

If, as a result of Contractor's failure to comply with the provision of the Contract, such use proves to be unsatisfactory to the District, the District will have the right to continue such use until such portion of work can, without injury to the District, be taken out of service for correction of defects, errors, omissions, or replacement of unsatisfactory materials or equipment, as necessary for such work to comply with the Contract, provided that the period of such operation or use pending completion of appropriate remedial action shall not exceed four months unless otherwise mutually agreed upon in writing between the parties.

SC-15 LIQUIDATED DAMAGES

The time limits stated in the Contract are of the essence. It is agreed by the parties to the Contract that in case all the work called for under the Contract is not substantially completed before or upon the expiration of the time limits set forth in the Contract, damage will be sustained by the District, and that it is and will be impracticable to determine the actual damage which the District will sustain in the event of and by reason of such delay, and it is therefore agreed that Contractor shall pay to the District an amount of **\$250 per day for each calendar day between the completion date required by the Contract, and the date the District deems the Contract work is substantially complete**, as liquidated damages and not as penalty. It is further agreed that the amounts stipulated are reasonable estimates of the damages that would be sustained by the District and Contractor agrees to pay such liquidated damages as herein provided. In case the liquidated damages are not paid, Contractor agrees that the District may deduct the amount thereof from any money due to or that may become due Contractor by progress payments or otherwise under the Contract, or if said amount is not sufficient, recover the total amount from Contractor or its surety.

SC-16 COST-REDUCTION INCENTIVE

The Contractor may submit to the District, in writing, proposals for modifying the Project Drawings, Technical Specifications, or other requirements of the Contract for the sole purpose of reducing the total cost of construction. The cost-reduction proposal shall not impair in any manner the essential functions or characteristics of the Project, including but not limited to service life, economy of operation, ease of maintenance, desired appearance, or design and safety standards.

Cost-reduction proposals shall contain the following information:

1. A description of both the existing Contract requirements for performing the work and the proposed changes.
2. An itemization of the Contract requirements that must be changed if the proposal is adopted.
3. A detailed estimate of the cost of performing the work under the existing Contract and under the proposed change. The estimates of cost shall be priced in the same manner as if the work were to be paid for as an extra work payment, as provided in this Part VI, Section SC-7, Extra Work Payment.
4. A statement of the time within which the District must make a decision thereon.
5. The Contract items of work affected by the proposed changes, including any quantity variation attributable thereto.

The provisions of this Section shall not be construed to require the District to consider any cost-reduction proposal that may be submitted hereunder. The District will not be liable to the Contractor for failure to accept or act upon any cost-reduction proposal submitted pursuant to this Section nor for any delays to the work attributable to any such proposal. If a cost-reduction proposal is similar to a change in the Project Drawings or Technical Specifications under consideration by the District for the Project at the time said proposal is submitted, or if such a proposal is based upon or similar to standard specifications, standard special provisions, or standard plans adopted by the District after the advertisement for the Contract, the Engineer will not accept such proposal, and the District reserves the right to make such changes without compensation to the Contractor under the provisions of this Section.

The Contractor shall continue to perform the work in accordance with the requirements of the Contract until an executed Change Order incorporating the cost-reduction proposal has been issued. If an executed Change Order has not been issued by the date upon which the Contractor's cost-reduction proposal specifies that a decision thereon should be made, or such other date as the Contractor may subsequently have specified in writing, such cost-reduction proposal shall be deemed rejected.

The District shall be the sole judge of the acceptability of a cost-reduction proposal and of the estimated net savings in construction costs from the adoption of all or any part of such proposal. In determining the estimated net savings, the right is reserved to disregard the Contract bid prices if, in the judgment of the District, such prices do not represent a fair measure of the value of work to be performed or to be deleted.

If the Contractor's cost-reduction proposal is accepted in whole or in part, such acceptance will be a Contract Change Order, which shall specifically state that it is executed pursuant to this Section SC-16. Such Change Order shall incorporate the changes in the Project Drawings and Technical Specifications that are necessary to be put into effect and shall include any conditions upon which the District's approval thereof is based if the approval of the District is conditional. The Change Order shall also set forth the estimated net savings in construction costs attributable to the cost-reduction proposal effectuated by the Change Order and shall further provide that fifty percent (50%) of said estimated net savings amount be included as compensation for the Contractor. The Contractor's cost of preparing the cost-reduction proposal shall be excluded from consideration in determining the estimated net savings in construction costs.

The District reserves the right, where it deems such action appropriate, to require the Contractor to share in the District's costs of investigating a cost-reduction proposal submitted by the Contractor as a condition of considering such proposal. Where such a condition is imposed, the Contractor shall indicate its acceptance thereof in writing, and such acceptance shall constitute full authority for the District to deduct amounts payable to the District from any monies due or that may become due to the Contractor under the Change Order. The Change Order incorporating the cost-reduction proposal and the Contractor's fifty percent (50%) share of the net savings will also include any deductions for the Contractor's share of the District's cost of investigating the proposals per the agreement between the District and the Contractor.

Acceptance of the cost-reduction proposal and performance of the work thereunder shall not extend the time of completion of the Contract, unless specifically provided for in the Contract Change Order authorizing the use of the cost-reduction proposal.

The amount specified to be paid to the Contractor in the Change Order that effectuates a cost-reduction proposal shall constitute full compensation to the Contractor for the cost-reduction proposal and the performance of the work thereof pursuant to the said Change Order.

SC-17 STORM WATER POLLUTION PREVENTION

Contractor shall implement any and all best management practices necessary to ensure no contamination of Calder Creek. Throughout project construction, debris generated from construction activities shall not enter Calder Creek. Contractor is directed to this Part VI, Section SC-19, Environmental Requirements, for further requirements regarding the protection of Calder Creek.

In addition to the above, Contractor shall take the following measures:

A. General

1. **Prevention:** The Contractor shall prevent the pollution of storm drain systems and creeks on or near the construction Project site(s) resulting from the construction. The Contractor shall keep pollutants out of storm drains by reducing the possibility of accidental discharge of materials and wastes, by reducing erosion and sedimentation, and by any action as required. The Contractor shall train all employees and subcontractors on the storm water pollution prevention requirements contained in these Specifications and ensure that all employees and subcontractors are aware of the consequences as described in paragraph A.3. below. The Contractor shall include appropriate

subcontract provisions to ensure that these requirements are met by all subcontractors.

2. Notification: If the Contractor causes or permits the spillage or overflow of any oil, or petroleum product, hazardous substance, contaminant, waste or wastewater, including overflows or releases of untreated or treated (partially or fully) wastewater, and backups into buildings and on private property, the Contractor shall notify the District as soon as possible to the extent notification can be provided without substantially impeding cleanup or other emergency measures. In no event shall such notification be later than one (1) hour after knowledge of the occurrence.
3. Cleanup: Immediately upon gaining knowledge of such spillage, overflow, or discharge, the Contractor shall eliminate the cause of the spillage, overflow, or discharge and take action to minimize any damages. The Contractor shall also immediately implement a cleanup program. The cleanup, including sampling and testing required by regulatory agencies to determine the nature and level of contamination, shall be performed and completed to the satisfaction of the various regulatory agencies involved and the District, at the expense of the Contractor. If the Contractor's response is not satisfactory to the District, the District may, at its own discretion, mobilize to eliminate the cause of the overflow and implement a cleanup program, including any necessary sampling and testing. District costs of cleanup efforts shall be at the Contractor's expense and collected at the discretion of the District. Any fines, penalties, and/or subsequent actions imposed upon the District and/or the Contractor by regulatory agencies related to the spillage, overflow, or discharge and any subsequent monitoring, testing, and reporting, as required by regulatory agencies, shall also be at the expense of the Contractor. The Contractor shall keep a stockpile of spill cleanup materials, such as rags or absorbents, readily accessible on site. The quantity of cleanup materials shall be appropriate in consideration of the risk of an occurrence of a spill, overflow, or discharge.

B. Management of Nonhazardous Material and/or Waste

1. Designated Area: The Contractor shall propose designated areas of the Project site, for approval by the Engineer, suitable for material delivery, storage, and waste collection that to the maximum extent practicable are near construction entrances and away from catch basins, gutters, drainage courses, and creeks.
2. Backfill or Excavated Material: The Contractor shall not allow backfill or excavated material to enter the storm drains or creeks. When rain is forecast within 24 hours or during wet weather, the Contractor may be required to cover such material with a tarpaulin and to surround the material with sand bags.
3. Disposal: At the end of each working day, the Contractor shall collect all scrap, debris, and waste material, and dispose of such materials properly. The materials may be stored in the Contractor's yard in stockpiles or placed in dumpsters. The Contractor shall inspect dumpsters for leaks and replace or repair dumpsters that leak. The Contractor shall not discharge water from

cleaning dumpsters on site. The Contractor shall arrange for regular waste collection before dumpsters overflow.

C. Management of Hazardous Material and/or Waste

1. Storage: The Contractor shall label and store all hazardous materials, such as pesticides, paints, thinners, solvents, and fuels, and all hazardous wastes, such as waste oil and antifreeze, in accordance with all applicable state and federal regulations. The Contractor shall store all hazardous materials and all hazardous wastes in accordance with secondary containment regulations. All such materials and wastes shall be covered, as needed, to avoid rainwater becoming polluted with hazardous constituents, which could result in potential management of collected rainwater as hazardous waste. The Contractor shall keep an accurate, up-to-date inventory, including Material Safety Data Sheets (MSDS), of hazardous materials and hazardous wastes stored on site.
2. Usage: When rain is forecast within 24 hours or during wet weather, the Contractor shall refrain from applying chemicals in outside areas. The Contractor shall follow material manufacturer's instruction regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals. The Contractor shall post warning signs in areas treated with chemicals.
3. Disposal: The Contractor shall arrange for regular hazardous waste collection to comply with time limits on storage of hazardous wastes. The Contractor shall dispose of hazardous waste in accordance with this Part V, Section GC-56, Contaminated Soil/Materials. The Contractor shall not wash any spilled material into streets, gutters, storm drains, or creeks and shall not bury spilled hazardous materials. The Contractor shall report any hazardous material spills to the District in accordance with paragraph A.2 above.

D. Vehicle/Equipment Cleaning, Maintenance, and Fueling

1. General: The Contractor shall inspect vehicles and equipment arriving on site for leaking fluids and shall promptly repair leaking vehicles and equipment. Drip pans shall be used to catch leaks until repairs are made.
2. Cleaning: The Contractor shall perform vehicle or equipment cleaning with water only in a designated, bermed area that will not allow rinse water to run off site into streets, gutters, storm drains, or creeks. Soaps, solvents, degreasers, steam-cleaning equipment, or equivalent methods shall not be allowed.
3. Maintenance and Fueling: The Contractor shall perform maintenance and fueling of vehicles or equipment in areas that will not allow run-on of storm water or runoff of spills to storm drains and that provide for confined cleanup. Examples are working in bermed areas or utilizing drip pans. The Contractor shall not contaminate the soils or groundwater with such maintenance and fueling activities.

The Contractor shall use secondary containment, such as a drip pan, to catch leaks or spills any time that vehicle or equipment fluids are dispensed, changed,

or poured, and shall clean up leaks and spills of vehicle or equipment fluids immediately and dispose of the waste and cleanup materials as hazardous waste, as described in paragraph C.3 above.

G. Concrete, Grout, and Mortar Waste Management

1. **Concrete Truck/Equipment Washout:** The Contractor shall not wash out concrete trucks or equipment into streets, gutters, storm drains, or creeks. The Contractor shall perform washout of concrete trucks or equipment off site or in a designated area on site where the water will flow onto dirt or into a temporary pit in a dirt area. The Contractor shall let the water percolate into the soil and dispose of the hardened concrete in a trash container. If a suitable dirt area is not available, the Contractor shall collect the wash water and remove it off site.
2. **Exposed Aggregate Concrete Wash Water:** The Contractor shall avoid creating runoff by draining water from washing of exposed aggregate concrete to a dirt area. If a suitable dirt area is not available, the Contractor shall filter the wash water through straw bales or equivalent material before discharging to a storm drain. The Contractor shall collect sweepings from exposed aggregate concrete for disposal.

SC-18 CULTURAL RESOURCES

Due to the potential of cultural resources in the area, the District will hire a qualified archaeologist to monitor the project during trenching in the event that buried cultural resource may be present and revealed during excavation. The archaeologist will not be on site full-time, but will be present at least twice during trenching activities. Contractor shall fully cooperate with and provide safe access to the District's archaeologist during construction.

If the project footprint is altered, additional cultural surveys and reviews are required prior to project implementation.

If unanticipated cultural resources are encountered during construction activities:

1. The person discovering the cultural resource shall notify the District by telephone within 4 hours of the discovery or the next working day if the department is closed.
2. When the cultural resource is located outside the area of disturbance, a qualified professional shall be allowed to photodocument and record the resource and construction activities may continue during this process. On parcels of two or more gross acres, the area of disturbance including building pads, septic areas, driveways or utility lines, grading and vegetation removal, plus 300 feet. On parcels of less than 2 gross acres, the area of disturbance equals the boundaries of the parcel.
3. When the cultural resource is located within the area of disturbance, all activities that may impact the resource shall cease immediately upon discovery of the resource. All activity that does not affect the cultural resource as determined by the District may continue. A qualified professional, defined in Section 17.07.360

of the Tuolumne County Ordinance Code, such as an archaeologist or a historian, shall be allowed to conduct an evaluative survey to evaluate the significance of the cultural resource.

4. When the cultural resource is determined to not be significant, the qualified professional or the District shall be allowed to photodocument and record the resource. Construction activities may resume after authorization from the District.
5. When a resource is determined to be significant, the resource shall be avoided with said resource having boundaries established around its perimeter by a qualified professional archaeologist or historian or a cultural resources management plan shall be prepared by a qualified professional to establish measures formulated and implemented in accordance with Sections 21083.2 and 21084.1 of the California Environmental Quality Act (CEQA) and the National Historic Preservation Act of 1966, as amended, (especially Code of Federal Regulations (CFR) 36 CFR Part 800; and the National Register of Historic Places regulations, especially 36 CFR Part 60) to address the effects of construction on the resource. The qualified professional shall be allowed to photodocument and record the resources. Construction activities may resume after authorization from the District. All further activity authorized by this permit shall comply with the cultural resources management plan.

A cultural resource is any building, structure, object, site, district, or other item of cultural, social, religious, economic, political, scientific, agricultural, educational, military, engineering or architectural significance to the citizens of Tuolumne County, the State of California, or the nation which is 50 years of age or older or has been listed on the National Register of Historic Places, the California Register of Cultural Resources, or the Tuolumne County Register of Cultural Resources.

6. If human remains are discovered during subsurface excavations on the project site, work shall stop and no further disturbance shall occur until the County Coroner has made the necessary determination as to the origin and disposition of the remains, including notification of the Native American Heritage Commission (NAHC) within 24 hours if remains are determined to be Native American, pursuant to Public Resources Code, Section 5097.98 and State Health and Safety Code, Section 7050.5.

SC-19 ENVIRONMENTAL REQUIREMENTS

If the project footprint is altered, additional biological surveys and reviews are required prior to project implementation.

Pre-Construction Bird Survey. A bird survey must be conducted by the District's biologist within 15 days prior to any vegetation removal or ground disturbance occurring between February 1st and August 30th of the construction year:

1. If equipment staging, site preparation, vegetation removal, grading, excavation or other project-related construction activities are scheduled during the avian nesting season (generally February 1 through August 30), a focused survey for active

nests would be conducted by a qualified biologist within 15 days prior to the beginning of project-related activities.

2. Surveys shall be conducted in all habitat in the Project Area (i.e., 1,000 feet from the outermost boundary of the proposed construction area). The minimum survey radii surrounding the work area shall be the following: i) 250 feet for passerines; ii) 500 feet for small raptors such as accipiters; iii) 1,000 feet for larger raptors such as buteos. Surveys shall be conducted at the appropriate times of day, and during appropriate nesting times.

If an active nest is found, the bird shall be identified as to species and the approximate distance from the closest work site to the nest estimated. No additional measures need be implemented if active nests are more than the following distances from the nearest work site: (a) 300 feet for raptors or (b) 75 feet for non-raptors. If active nests are closer than those distances to the nearest work site and there is the potential for destruction of a nest or substantial disturbance to nesting birds due to construction activities, a plan to monitor nesting birds during construction shall be prepared and submitted to the CDFW for review and approval. Disturbance of active nests shall be avoided to the extent possible until it is determined that nesting is complete and the young have fledged.

Erosion Control and Protection of Calder Creek. Contractor shall implement the following during construction:

1. Erect high-visibility orange construction/safety fencing separating the construction area from Calder Creek. Fencing shall remain in place throughout construction to ensure that construction runoff and/or fill does not enter the drainage. No construction-related materials, equipment, trash or other related debris shall be allowed, stored or staged within the fenced area. Fencing shall remain in place until the project is completed. Install temporary silt fencing, fiber rolls, or equivalent erosion and sediment control devices along the fence boundary as necessary to protect water quality.
2. Implement standard best management plans for erosion control for any construction to take place between October 15 and May 15 of any year. In the absence of such approved and implemented plan, all construction shall cease on or before October 15th.

PART VII TECHNICAL SPECIFICATIONS

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TWAIN HARTE COMMUNITY SERVICES DISTRICT PARK SEWER LINE REPLACEMENT PROJECT

TECHNICAL SPECIFICATIONS

JUNE 2018

Prepared by:

BLACKWATER
CONSULTING ENGINEERS, INC.

605 Standiford Ave, Ste. N
Modesto, CA 95350
Tel. 209.322.1820
Fax. 209.222.4088



SECTION 01100

SUMMARY OF REQUIREMENTS

PART 1 GENERAL

1.01 LOCATION OF WORK

- A. The work is located at Eproson Park (22901 Meadow Drive) which is within the County of Tuolumne and under the jurisdiction of the Twain Harte Community Services District (THCSD, District or Owner).

1.02 SCOPE OF WORK

- A. The work to be performed under this Contract shall consist of furnishing all equipment, materials, supplies, and manufactured articles, and furnishing all shipping and transportation and services, and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The work shall be complete and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper operation of the project shall be provided by the CONTRACTOR as though originally so indicated at no increase in cost to the OWNER.
- B. Work includes all appurtenant work for the complete installation of the facilities as shown on the drawings and these Project Specifications. In case of conflict, these Project Specifications shall take precedence.
- C. The CONTRACTOR is advised to inspect the site to observe actual working conditions.

1.03 PROJECT DESCRIPTION

- A. This project consists of the replacement of approximately 233 linear feet of sewer pipe and all construction activities required for the removal and installation of said pipe as shown in the drawings described herein.

1.04 WORK CONSTRAINTS

- A. Construction activities shall be scheduled in such a manner to limit construction disturbances and site disruption at each work site.
- B. The following constraints shall be followed during the course of construction.

1. The Contractor for this project will be the PRIMARY CONTRACTOR RESPONSIBLE for coordinating all work schedules, all construction cleanup, and site safety for each working day of this project.
2. Saw cutting of pavement shall not begin more than two weeks prior to construction within that work site.

1.05 CONNECTIONS TO EXISTING FACILITIES

- A. CONTRACTOR shall coordinate shutdowns with OWNER, providing a minimum of 10 calendar days of prior notice. The CONTRACTOR shall schedule and coordinate the necessary shutdown of the existing facilities with the ENGINEER. The shutdown or bypass period shall be held to a minimum and the CONTRACTOR shall have all materials required for the work at the job site prior to requesting the action.
- B. As part of the requirements for submittal of progress schedules, CONTRACTOR is required to prepare and submit a written plan detailing the plan of operation, the materials, methods, schedule, equipment to be used, hours of operation, number of workers, and type of work to be conducted. The plan shall be submitted to the OWNER for approval 10 calendar days prior to planned work. Shutdowns shall not proceed without the review and approval by the OWNER. No time extensions or damages will be considered for delays caused by failure of CONTRACTOR to plan, schedule and coordinate the work.
- C. CONTRACTOR shall make all excavations and furnish, install and maintain such shoring, bracing, and sheeting, and all materials necessary for all footings, forms and conduits.

1.06 CONSTRUCTION SEQUENCING (NOT USED)

1.07 MOBILIZATION AND DEMOBILIZATION

- A. Mobilization and demobilization includes all project preparatory/completion work and operations, including but not limited to; those necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site; the establishment of facilities necessary to conduct the specified work on the project; and setting up and rigging down. Additionally, this shall include all related work and operations which must be performed prior to and after completion of the project, such as, obtaining bonds, insurance policies, and permits, and filing the required reports at project completion and as required by the Contract Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

01100-2

SECTION 01280

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 METHOD OF MEASUREMENT

- A. All work completed under the contract is measured in U.S. standard measure.
 - 1. The OWNER measures and determines quantities of material furnished and work performed in accordance with these specifications and OWNER Standards.
 - 2. The methods of measurement and computations for determining quantities of material furnished and of work performed under the contract are methods generally recognized as conforming to good engineering practice.

- B. When the term "Estimated Quantity" is indicated in the Bid Schedule item designation:
 - 1. Accept the estimated quantity in the bid as the final quantity for which payment will be made, unless the ENGINEER revises the plan dimensions through an approved change order.
 - a. The ENGINEER adjusts the final quantity for payment by the amount of increase or decrease to the estimated quantity in the bid represented by authorized changes in dimensions.
 - 2. Request an adjustment to the final quantity for payment if an error is discovered in the estimated quantity in the bid.
 - 3. Provide all computations, plots, and supporting documentation necessary for the ENGINEER to verify the error and determine the final quantity for payment.
 - a. All work associated with providing computations, plots, and supporting documentation is at no cost to the OWNER, except:
 - 1) Work required providing computations, plots, and supporting documentation may be paid for as extra work when the final quantity differs from the estimated quantity by more than 10 percent.

- C. Lump Sum or Each:
 - 1. OWNER measures the complete structure or structural unit, signal or lighting system, or other items of work specified in the bid to be measured by lump sum or each to include all necessary work, fittings, and accessories for a complete unit or system.

- D. Length:
 - 1. Items measured by the foot such as pipe culverts, striping, underdrains, etc. are measured parallel with the base, foundations and alignments of pipe upon which the structures or pipes are placed and shall include all necessary work, fittings, and accessories for a complete unit or system.

2. The term "station" when used as a definition or term of measurement is 100 linear feet.
- E. Area:
1. OWNER uses horizontal longitudinal and plan (neat) transverse measurements unless otherwise specified.
- F. Volume:
1. OWNER measures structures using plan (neat) dimensions, or altered dimensions when approved by the ENGINEER to fit field conditions.
 2. OWNER uses average end area for computing volumes of excavation.
 3. Materials specified to be measured by the cubic yard may be weighed and converted to cubic yard for payment purposes, when requested by the CONTRACTOR and approved by the ENGINEER in writing prior to procurement of materials.
 - a. Agree to the factors for conversion from weight measurement to volume as determined by the ENGINEER before using this method of measurement for computing pay quantities.
- G. Weight:
1. The term "ton" means 2,000 pounds avoirdupois.
- H. Standard manufactured items such as fence, wire, plates, rolled shapes, pipe conduit, etc., identified by gauge, unit, weight, section dimensions, etc.
1. OWNER uses nominal weights or dimensions and industry manufacturing tolerances unless otherwise specified.
- I. Plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing:
1. OWNER measures thickness in fractions of inches.

1.02 WEIGHING REQUIREMENTS AND PROCEDURES

- A. Weigh all materials that are measured or proportioned by weight, or contract items measured by the ton, such as asphalt materials, on scales that have been approved, certified, and which meet specification requirements.
1. Obtain certified haul truck tares and place a legible identification mark on each truck.
 2. OWNER may return any loads of material that appear to be deficient or questionable to be reweighed.

1.03 METHOD OF PAYMENT

- A. Payment will be made on the basis of the unit prices bid for the various items as called for on the Bid Form and included in the contract as awarded in compliance with Section 9 of the General Provisions. The quantities given in the Bid Form are approximate only and are given as a basis for the comparison of bids, and the OWNER does not expressly or by implication agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount

of or any class or portion of the work or to omit portions of the work as may be deemed necessary or advisable by the OWNER.

- B. Payment for the various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of work as specified and shown on the drawings, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of work.

1.04 PAYMENT SCHEDULE

A. Bid/Pay Item general descriptions:

1. MOBILIZATION AND DEMOBILIZATION (Lump Sum)

- a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in mobilization, demobilization, and general project coordination and management in accordance with the drawings and specifications, including but not limited to:
- 1) Movement of personnel, equipment, supplies and incidentals to and from the project site;
 - 2) Establishment of facilities and other preparations necessary for the work;
 - 3) Construction coordination, miscellaneous submittals and adherence to miscellaneous contract requirements;
 - 4) Construction progress documentation;
 - 5) Record drawings;
 - 6) Safety;
 - 7) Quality control;
 - 8) Site, equipment and materials management;
 - 9) Stormwater pollution prevention and erosion control measures;
 - 10) Adherence to environmental and cultural requirements;
 - 11) Restoration of property, including, but not limited to vegetation, landscaping, retaining wall, fences, surfaces and other property affected by the work; and
 - 12) Final clean-up.

2. CLEARING AND GRUBBING (Lump Sum)

- a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in site preparation and clearing

and grubbing the project area in accordance with the drawings and specifications and as directed by the Engineer, including but not limited to:

- 1) Site preparation;
- 2) Installation of protection measures for existing facilities and Calder Creek;
- 3) Clearing and grubbing work area, including but not limited to: removing and disposing of vegetation, trees, stumps, stones, pavement, concrete, and debris obstructing the work;
- 4) Trimming and protecting landscaping, trees and vegetation as needed;
- 5) Demolition and removal of fences, landscaping and other structures; and
- 6) Salvaging materials for site restoration.

3. RECONNECT TO EXISTING LATERALS (Each)

- a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in disconnecting and reconnecting existing laterals from existing sewer line and to new sewer line in accordance with the drawings and specifications and as directed by the Engineer, including but not limited to:
 - 1) Excavation and backfill;
 - 2) Pipe, fittings, and necessary appurtenances and materials; and
 - 3) All sanitary safety measures.

4. CONNECT TO EXISTING MANHOLES (Each)

- a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in disconnecting and reconnecting new sewer line to existing manholes in accordance with the drawings and specifications and as directed by the Engineer.

5. 8" SEWER LINE - PVC SDR-35 (Linear Foot)

- a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in replacing existing 8" sewer line with new 8" sewer line, in accordance with the drawings and specifications and as directed by the Engineer, including but not limited to:
 - 1) Trenching, pipe placement, backfill and compaction;
 - 2) Shoring, bracing and trench safety;
 - 3) Protection of existing utilities and repair of any damaged utilities;
 - 4) Pipe, fittings, tracer wire, backfill materials and necessary appurtenances and materials;
 - 5) Testing; and
 - 6) Trench repair.

6. 12" STEEL PIPE SLEEVE (Linear Foot)
 - a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in installing a 12" steel pipe sleeve in accordance with the drawings and specifications and as directed by the Engineer, including but not limited to:
 - 1) Temporary conveyance of culvert flows;
 - 2) Steel pipe sleeve and necessary appurtenances; and
 - 3) Sand and slurry backfill and compaction.
7. DEWATERING (Lump Sum)
 - a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in dewatering trenches and excavations in accordance with the drawings and specifications and as directed by the Engineer.
8. SEWER BYPASS PUMPING (Lump Sum)
 - a. This work includes the furnishing of all tools, equipment, labor, materials and incidentals and for doing all the work involved in temporarily bypassing sewer flows around the work during sewer line construction in accordance with the drawings and specifications and as directed by the Engineer.

PART 2 EXECUTION (NOT USED)

END OF SECTION

01280-5

SECTION 01320

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.01 GENERAL

- A. This section specifies the procedures for construction progress documentation for planning and management of construction activities. The documents listed in this section provide a basis for determining the progress status of the project relative to the completion time, specific dates, and for determining the acceptability of the CONTRACTOR'S progress payment estimates.

1.02 CONFORMANCE WITH GENERAL PROVISIONS

- A. In addition to this section, the CONTRACTOR shall comply with all requirements of the OWNER General Requirements.

PART 2 PRODUCTS

2.01 CONSTRUCTION SCHEDULE

- A. The CONTRACTOR shall provide a construction schedule prepared by the critical path method (CPM) of analysis. The critical path schedule shall be prepared from estimates of the required duration and sequence for each item of work and task to be performed. A general guide for preparing such a schedule is contained in "The Use of CPM in Construction, a Manual for Contractors," published by the Associated General Contractors of America. No progress payments will be made until the ENGINEER has accepted the CONTRACTOR'S construction schedule.
- B. The CONTRACTOR shall provide a schedule of the overall project at the preconstruction meeting.
- C. The schedule shall depict all significant construction activities

2.02 CONSTRUCTION PHOTOGRAPHS & VIDEO RECORDING

The color photographs and color audio-video recordings are intended for use as indisputable evidence in ascertaining the extent of any damage which may occur as a result of the CONTRACTOR'S operations and are for the protection of the public, the CONTRACTOR and the OWNER. These documents will be a means of determining whether and to what extent damage, resulting from the CONTRACTOR'S operations,

occurred during the execution of the Contract Work. All original pre- and post-construction video recording and photograph files shall be delivered to the OWNER and shall become the property of the OWNER.

A. Photographs

1. Photograph documents shall meet the following requirements:
 - a. Color digital photographs with a minimum resolution of 2304 x 1728 pixels (3.0 Megapixels).
 - b. Time & Date stamp on the photograph of when the image was taken.
 - c. Location where the photograph was taken.

PART 3 EXECUTION

3.01 CONSTRUCTION PHOTOGRAPHS

- A. After the Contract is awarded but before mobilization to the site, the CONTRACTOR shall make a thorough examination of all the existing structures, vegetation, utilities, and general condition of the work site and shall record all existing site conditions using photographs.
- B. After the completion of the overall project, post construction photographs shall be done. A copy of all post construction recorded documents shall be provided to the ENGINEER. The ENGINEER will ascertain the extent of damage, if any, and will determine whether existing improvements, damaged or removed during construction, have been returned to specified or original condition. Final payment shall not be made until the ENGINEER has determined that the construction site meets or exceeds the specified or original condition.

END OF SECTION

01320-2

SECTION 01330
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 GENERAL

- A. Submittals covered by these requirements include manufacturers' information, shop drawings, test procedures, test results, samples, requests for substitutions, and miscellaneous work-related submittals. The CONTRACTOR shall furnish all drawings, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's installation and other instructions as specifically required in the Contract Documents to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the Contract Documents.

1.02 CONTRACTOR'S RESPONSIBILITIES

- A. The CONTRACTOR shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. The CONTRACTOR shall verify that all features of all products conform to the specified requirements. Submittal documents shall be clearly edited to indicate only those items, models, or series of equipment, which are being submitted for review. All extraneous materials shall be crossed out or otherwise obliterated. The CONTRACTOR shall ensure that there is no conflict with other submittals and notify the ENGINEER in each case where his submittal may affect the work of another CONTRACTOR or the OWNER. The CONTRACTOR shall coordinate submittals among his SUBCONTRACTORS and SUPPLIERS including those submittals complying with unit responsibility requirements specified in applicable technical sections.
- B. The CONTRACTOR shall coordinate submittals with the work so that work will not be delayed. The CONTRACTOR shall coordinate and schedule different categories of submittals, so that one will not be delayed for lack of coordination with another. No extension of time will be allowed because of failure to properly schedule submittals. The CONTRACTOR shall not proceed with work related to a submittal until the submittal process is complete.
- C. The CONTRACTOR shall certify on each submittal document that he has reviewed the submittal, verified field conditions, and complied with the Contract Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 TRANSMITTAL PROCEDURE

- A. Unless otherwise specified, submittals regarding material and equipment shall be accompanied by Transmittal Form. A separate form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which the submittal is required. Submittal documents common to more than one piece of equipment shall be identified with all the appropriate equipment numbers. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.
- B. If the CONTRACTOR proposes to provide material, equipment, or method of work which deviates from the project requirements, he shall indicate so under "deviations" on the transmittal form accompanying the submittal copies.

3.02 SUBMITTAL REVIEW PROCEDURE

- A. Review shall not extend to means, methods, techniques, sequences or procedures of construction. Verifying quantities, dimensions, weights or gages, or fabrication processes (except where specifically indicated or required by the project) or to safety precautions or programs incident thereto. Review of a separate item, as such, will not indicate approval of the assembly in which the item functions.
- B. Three (3) copies, unless otherwise specified during the preconstruction meeting, of all submittals required shall be furnished to the OWNER for review. The OWNER shall review the submittal and return one (1) copies of the marked-up original within three (3) working days after receipt of a submittal for review and comment, unless otherwise specified. All shop drawings and layout drawings submittals shall be submitted a minimum of 10 working days before approved submittal drawings will be required for the work.
- C. Submittals which do not have all the information required to be submitted, including deviations, are not acceptable and will be returned without review.

3.03 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS

- A. Review of contract drawings, methods of work, or information regarding materials or equipment the CONTRACTOR proposes to provide, shall not relieve the CONTRACTOR of his responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the ENGINEER or the OWNER, or by any employee thereof, and the CONTRACTOR shall have no claim under the Contract on account of the failure, or partial failure, of the method of work, material, or equipment so reviewed.

- B. The Work covered by a submittal may be commenced only after the ENGINEER has reviewed the pertinent submittals and returned copies to the CONTRACTOR marked either "No Exceptions Taken" or "Make Corrections Noted." Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents. Review of submittals by the ENGINEER shall not be construed as relieving the CONTRACTOR of his/her responsibilities under this Contract.

END OF SECTION

01330-3

SECTION 01450
QUALITY CONTROL

PART 1 GENERAL

1.01 GENERAL

- A. Where the Contract Documents require work to be field tested or approved, it shall be tested in the presence of the CONSTRUCTION MANAGER or its authorized representative. The CONSTRUCTION MANAGER shall have the right to witness all on-site tests performed by the CONTRACTOR and any shop tests. The results of any tests performed by the CONTRACTOR shall be made available for the information of the CONSTRUCTION MANAGER. Inspections, tests or favorable reviews by the CONSTRUCTION MANAGER shall not relieve the CONTRACTOR of its obligation to perform the work in accordance with the requirements of the Contract Documents or for its sole responsibility to the quality of workmanship and materials.
- B. Except as specifically required under the technical specifications for testing and inspection, all tests for materials furnished by the CONTRACTOR will be done in accordance with commonly recognized standards of national organizations. Where tests are to be performed by the CONSTRUCTION MANAGER or an independent testing laboratory or agency, the CONTRACTOR will provide all samples of materials without charge. The CONSTRUCTION MANAGER and not the CONTRACTOR will select the sample or samples of materials to be tested. No material for which the Contract Documents require the submittal and approval of tests, certificates of compliance or other documentation shall be incorporated in the work until submittal and approval of the submittal has been made.
- C. The CONTRACTOR shall provide safe access for the CONSTRUCTION MANAGER and its inspectors to inspect the quality of work and the works conformance with the Contract Documents. The CONTRACTOR shall furnish the CONSTRUCTION MANAGER the necessary labor and facilities for such things as excavation in compacted fills to the depths required to take samples and/or density tests. The CONTRACTOR shall provide adequate lighting, ventilation, ladders and other equipment or protective facilities as may be necessary for the safe performance of inspections.
- D. Upon completion of the Work, the CONSTRUCTION MANAGER will conduct a final inspection. Records shall be available at all reasonable hours for inspection by other local and State agencies to ascertain compliance with laws and regulations.

1.02 NOTICE

- A. The CONTRACTOR shall notify the CONSTRUCTION MANAGER at least 24 hours before any field testing or special inspections are required to be performed by the

CONSTRUCTION MANAGER or the independent testing laboratory furnished by the OWNER. The CONTRACTOR shall notify the CONSTRUCTION MANAGER at least two hours before any inspection is required to be performed or to witness the CONTRACTOR'S on-site field testing.

- B. Whenever the CONTRACTOR varies the period during which work is carried on each day, the CONTRACTOR shall give the CONSTRUCTION MANAGER due notice so proper and timely inspection may be provided. Any work done in the absence of the CONSTRUCTION MANAGER shall be subject to rejection by the CONSTRUCTION MANAGER and/or the OWNER.

PART 2 QUALITY CONTROL

2.01 QUALITY CONTROL

- A. All materials and equipment shall be new and of the specified quality and equal to the samples found to be acceptable by the DESIGN CONSULTANT if samples have been submitted. It shall be the duty of the CONTRACTOR to call the CONSTRUCTION MANAGER'S attention to apparent errors or omissions and request instructions before proceeding with the Work. The CONSTRUCTION MANAGER may, by appropriate instructions, correct errors and supply omissions not involving extra cost, which instructions shall be as binding upon the CONTRACTOR as though contained in the original Contract Documents.
- B. At the option of the CONSTRUCTION MANAGER, materials and equipment to be supplied under this Contract will be tested and inspected either at their place of origin or at the site of the Work. The CONTRACTOR shall give the CONSTRUCTION MANAGER written notification at least 30 days prior to the shipment of materials and equipment to be tested and inspected at point of origin. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the materials and equipment nor shall such tests and inspections preclude retesting or re-inspection at the site of the Work.
- C. Inspection of the Work by the OWNER, CONSTRUCTION MANAGER and/or DESIGN CONSULTANT shall not relieve the CONTRACTOR of its obligations to conduct comprehensive inspections of the Work and to furnish materials and perform acceptable Work, and to provide adequate safety precautions, in conformance with the intent of the Contract.

PART 3 INSPECTION

3.01 INSPECTION

- A. All work and materials are subject to the inspection of the CONSTRUCTION MANAGER. The CONTRACTOR shall notify the CONSTRUCTION MANAGER before noon of the working day before inspection is required. If the Specifications, the CONSTRUCTION MANAGER'S instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the CONTRACTOR shall give timely notice, in writing, of its readiness for inspection. Unless otherwise

determined by the CONSTRUCTION MANAGER, all inspections shall be done only in the presence of the CONSTRUCTION MANAGER or its authorized representatives. The OWNER, CONSTRUCTION MANAGER, DESIGN CONSULTANT and authorized government agents and their representatives shall at all times be provided safe access to the Work wherever it is in preparation or progress and to all warehouses and storage yards wherein materials and equipment are stored, and the CONTRACTOR shall provide facilities for such access and for inspection, including maintenance of temporary and permanent access. Inspection of the Work shall not relieve the CONTRACTOR of the obligation to fulfill all conditions of the Contract, and improper work will be subject to rejection. Work and materials not meeting such requirements shall be made good and unsuitable work or materials may be rejected; notwithstanding that such work or materials have been previously inspected by the CONSTRUCTION MANAGER or that payment therefore has been included in a progress estimate.

3.02 WORK COVERED PRIOR TO INSPECTION AND/OR TESTING

- A. No portion of any work or installed materials shall be covered or concealed in any manner whatsoever without first being inspected by the CONSTRUCTION MANAGER. If any work should be covered up without the approval or consent of the CONSTRUCTION MANAGER, the CONSTRUCTION MANAGER shall have the authority to require that such work be uncovered for examination; defective work, if any, corrected; and recovered at the CONTRACTOR'S expense.

PART 4 SAMPLES AND TESTS

4.01 SAMPLES AND TESTS

- A. At the option of the CONSTRUCTION MANAGER, the source of supply of materials for the Work shall be subject to tests and inspection before the delivery is started and before such materials are used in the Work. Representative preliminary samples of the character and quality prescribed shall be submitted by the CONTRACTOR or producer of materials to be used in the Work in sufficient quantities or amounts for testing or examination.
- B. All tests of materials furnished by the CONTRACTOR shall be made in accordance with the commonly recognized standards of national technical organizations, and such special methods and tests as are prescribed in the Contract Documents.
- C. Certificates of compliance shall be provided by the CONTRACTOR as required in the Technical Specifications.

4.02 SAMPLING

- A. The CONTRACTOR shall furnish such samples of materials as are requested by the CONSTRUCTION MANAGER, without charge. No material shall be used until the CONSTRUCTION MANAGER has had the opportunity to test or examine such materials. Samples will be secured and tested whenever necessary to determine the quality of the material. Samples and test specimens prepared at the jobsite, such as concrete test cylinders, shall be taken or prepared by the CONSTRUCTION MANAGER or Testing Firm in the presence and with the assistance of the CONTRACTOR.

4.03 TESTING

- A. Unless otherwise provided, all initial testing for concrete and soils shall be at no expense to the CONTRACTOR and shall be performed in the OWNER'S laboratory or in a laboratory designated by the OWNER. Any retesting required due to failed test or defective material or sample shall be at the CONTRACTOR'S expense. When required by the Contract or the CONSTRUCTION MANAGER, the CONTRACTOR shall furnish, at no extra charge, certificates of tests of materials and equipment made at the point of manufacture by a recognized testing laboratory.
- B. The CONTRACTOR is responsible for all system and equipment testing as provided for in these Contract Documents.

4.04 TEST STANDARDS

- A. All sampling, specimen preparation, and testing of materials shall be in accordance with the standards of nationally recognized technical organizations.
- B. The physical characteristics of all materials not particularly specified shall conform to the latest standards published by the American Society for Testing Materials, where applicable.

END OF SECTION

01450-4

SECTION 01510
SEWER BYPASS PUMPING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals required to maintain continuous and reliable wastewater service in all wastewater lines and laterals during construction.
- B. During various phases of the Work, it will be necessary to construct and maintain temporary bypass sewers to maintain continuous and reliable wastewater flow in all pipes, including individual service connections. Various phases of the Work that shall require the implementation of temporary bypass sewers include, but are not limited to, connections of new sewers to existing sewers, trenchless rehabilitation of existing sewers, and pipeline inspection.
- C. CONTRACTOR shall construct and maintain all temporary bypass sewers and be responsible for all bypass pumping of sewage that may be required to prevent backing up of sewage and allow appropriate conditions for proper inspection, rehabilitation, testing or drainage during force main rehabilitation, replacement or reconnections to existing sewers. The CONTRACTOR shall immediately remove and dispose of all offensive matter spilled during the bypass pumping at his own expense. The CONTRACTOR shall also be responsible for paying any fines imposed as a result of spills or overflows that occur as a result of the bypass pumping operations.
- D. The design, installation, and operation of the temporary pumping system shall be the CONTRACTOR'S responsibility.
- E. CONTRACTOR shall provide a redundant bypass pump, intake and discharge conduit, and other equipment necessary to provide continuous wastewater flow and prevent the backing up of sewage in the case of emergencies at all times.
- F. Where no alternate sanitary sewer route is available or when twenty-four hours of storage is not feasible, redundant bypass pumping shall be installed.
- G. Primary bypass pumps shall be critically silenced when used in residential settings or areas where excessive noise levels would create a disturbance. Redundant bypass pumping does not have to be critically silenced.

01510-1

1.02 SUBMITTALS

- A. The CONTRACTOR shall submit to the ENGINEER a schedule to complete the Work. It will include the sequencing and coordination of connections to existing sewers, pipeline inspection, trenchless rehabilitation and testing of existing sewers, and the handling of wastewater flow during construction. The schedule of work shall also be reviewed and approved by the OWNER.
- B. The CONTRACTOR shall prepare a specific, detailed description of the proposed pumping system (Bypass Pumping Plan). The Bypass Pumping Plan shall be submitted and approved prior to the mobilization of any of the equipment included in the Bypass Pumping Plan. The Bypass Pumping Plan shall outline all provisions and precautions to be taken by the CONTRACTOR regarding handling of existing wastewater flows.

The Bypass Pumping Plan must be specific and complete, including such items as a schematic diagram of equipment, types, sizes, locations, redundancy measures, hours of operation, operational and emergency procedures, and personnel, including contact information. No construction shall begin until all provisions and requirements have been reviewed and accepted by the ENGINEER and OWNER. The plan shall include but not limited to the following details:

1. Staging areas for pumps.
2. Sewer plugging method and types of plugs.
3. Size and location of manholes or access points for suction and discharge hose piping.
4. Number, size, material, location and method of installation of suction piping.
5. Number, size, material, location and method of installation of discharge piping.
6. Bypass pump sizes, capacities, and number of each size to be provided onsite including all primary, secondary, and spare pumping units.
7. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump, operating range shall be submitted).
8. Downstream discharge plan.
9. Method of protecting discharge manholes or structures from erosion and damage.
10. Thrust and restraint block sizes and locations. Provide the details necessary to demonstrate the integrity of all suction and discharge piping including piping and fittings associated with all primary and secondary pumping units.
11. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill.
12. Method of noise control for each pump and any additional equipment that is included in the Bypass Pumping Plan.
13. Any temporary pipe supports and anchoring requirements.
14. Calculations for selection of bypass pumping pipe size.
15. Schedule for installation of and maintenance of bypass pumping lines.
16. Plan indicating location of bypass pumping pipe locations.
17. Emergency plan for adverse weather and flooding for various phases of the Work.
18. CONTRACTORS plan for providing continuous monitoring of the bypass pumping operation as well as the monitoring persons' qualifications.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 BYPASS PUMPING OF FLOW IN EXISTING SEWERS

- A. The CONTRACTOR shall supply pumps, conduits, power, and other equipment to divert the flow of sewage around the section in which Work is to be performed. The bypass system shall be of sufficient capacity to handle the wastewater flows. It is the intent of these Specifications to require the CONTRACTOR to establish adequate bypass pumping as required regardless of the flow condition.
- B. The CONTRACTOR shall perform leakage and pressure tests of the bypass pumping discharge piping using clean water prior to the actual operation. The pressure and leakage test shall be conducted at one-and-a-half times the maximum pressure the system will experience based on the approved Bypass Pumping Plan for a period of two hours. No leakage is permitted during this test. The ENGINEER will be given 24 hours' notice prior to testing. In addition, the CONTRACTOR shall demonstrate that the pumping system is in good working order and is sufficiently sized to successfully handle flows by performing a test run for a period of 2 hours of peak flows, as determined by the ENGINEER, prior to beginning the Work.
- C. The CONTRACTOR shall provide on-site manual oversight of all bypass pumping operations. If the CONTRACTOR's bypass pumping system is proposed to operate 24 hours per day, the Contractor's shall provide an onsite monitor to oversee pumping operations 24 hours per day. The monitoring person shall be properly trained, experienced, and mechanically qualified such that they can quickly and effectively address any potential emergency and non-emergency situations associated with the pumps and bypass pumping system that must remain in operation for an extended period.
- D. Flows from private, commercial, and industrial users shall be handled by the CONTRACTOR during the Work without interruption.
- E. The CONTRACTOR shall be required to repair, at his own expense, any damage to public or private property caused by his operations.
- F. Should damage of any kind occur to the existing sewers, the CONTRACTOR shall, at his own expense make repairs to the satisfaction of the ENGINEER and the OWNER.
- G. The CONTRACTOR shall immediately notify the OWNER and County Health Department should a sanitary sewer overflow (SSO) occur and take the necessary action to clean up and disinfect the spillage to the satisfaction of the OWNER and/or other governmental agency. If sewage is spilled onto public or private property, the CONTRACTOR shall wash down, clean up, and disinfect the spillage to the satisfaction of the property owner, OWNER, and/or other governmental agency.

- H. The CONTRACTOR shall not be permitted to overflow, bypass, pump or by any other means convey drainage to any land, street, storm drain or water course.
- I. The CONTRACTOR shall cease bypass pumping operations and return flows to the new and/or existing sewer when directed by the OWNER. During bypassing, no wastewater shall be leaked, dumped, or spilled in or onto any area outside the existing wastewater system. When bypass operations are complete, all bypass piping shall be flushed with fresh water and drained into the wastewater collection system prior to disassembly.
- J. CONTRACTOR must take care to prevent damage to existing structures. Discharge piping to gravity sewer systems shall be designed in such a manner as to prevent discharge from contacting manhole walls or benching and full discharge shall go into downstream pipe with as minimal turbulence as possible. CONTRACTOR is responsible for any damage to manholes. It may be necessary to remove the manhole cone to provide sufficient space for the bypass piping. If this is required, the CONTRACTOR shall be responsible for any damage to existing manhole components.

END OF SECTION

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SECTION 01720
RECORD DRAWINGS

PART 1 GENERAL

1.01 SUMMARY

- A. The CONTRACTOR shall provide the CONSTRUCTION MANAGER one neatly and legibly marked set of full size Contract Drawings showing the final location of piping, equipment, and structures. Marking of the drawings shall be kept current and shall be done at the time the material and equipment are installed. These drawings shall be available to the CONSTRUCTION MANAGER at all times.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

01720-1

SECTION 02050

SOILS AND AGGREGATES FOR EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Aggregate Base Course.
 - 2. Class 2 Permeable.
 - 3. Drain Rock.
 - 4. Gravel.
 - 5. Not used.
 - 6. Native Material.
 - 7. Sand.
 - 8. Select Material.
 - 9. Stabilization Material.

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. C 117 - Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing.
 - 2. C 131 - Standard Test Method for Resistance to Degradation of Small-Size Course Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - 3. C 136 - Standard Test Method for Sieve Analysis of Fine and Course Aggregates.
 - 4. D 422 - Standard Test Method for Particle-Size Analysis of Soils.
 - 5. D 2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
 - 6. D 2844 - Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils.
 - 7. D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - 8. D 4829 - Standard Test Method for Expansion Index for Soils.
 - 9. D 5821 - Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate.
- B. California Department of Transportation:
 - 1. Standard Specifications.
 - 2. California Test 205.
 - 3. California Test 211.
 - 4. California Test 217.
 - 5. California Test 229.
 - 6. California Test 301.

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1.03 SUBMITTALS

- A. Product data:
 - 1. Material source.
 - 2. Gradation.
 - 3. Testing data.
- B. Quality control for aggregate base course:
 - 1. Test reports: Reports for tests required by Sections of Standard Specifications.
 - 2. Certificates of Compliance: Certificates as required by Sections of Standard Specifications.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Storage and protection: Protect from segregation and excessive moisture during delivery, storage, and handling.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General:
 - 1. Provide material having maximum particle size not exceeding 4 inches and that is free of trash, lumber, debris, leaves, grass, roots, stumps, and other organic matter.
 - 2. Materials derived from processing demolished or removed asphalt concrete are not acceptable.
- B. Aggregate Base Course:
 - 1. Class 2, 3/4 inch maximum aggregate size free from organic matter and other deleterious substances, and of such nature that aggregate can be compacted readily under watering and rolling to form a firm, stable base.
 - a. Aggregate base course for structures:
 - b. Consist of crushed or fragmented particles.
 - c. Coarse aggregate material retained in Number 4 sieve shall consist of material of which at least 25 percent by weight shall be crushed particles when tested in accordance with California Test 205.
 - 2. Aggregate shall not be treated with lime, cement, or other chemical material.
 - 3. Durability index: Not less than 35 when tested in accordance with California Test 229.
 - 4. Aggregate grading and sand equivalent tests shall be performed to represent not more than 500 cubic yards or 1 day's production of material, whichever is smaller.
 - 5. Sand equivalent: Not less than 25 when tested in accordance with California Test 217.
 - 6. Resistance (R value): Not less than 78 when tested in accordance with California Test 301.
 - 7. Conform to size and grade within the limits as follows when tested in accordance with ASTM C 117 and ASTM C 136:

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Sieve Sizes (Square Openings)	Percent by Weight Passing Sieve
1 inch	100
3/4 inch	90-100
Number 4	35-60
Number 30	10-30
Number 200	2-9

C. Class 2 Permeable:

1. Consist of hard, durable particles of stone or gravel, screened or crushed to the specified size and gradation.
2. Provide free of organic matter, lumps or balls of clay, and other deleterious matter.
3. Sand equivalent: Not less than 75 when tested in accordance with ASTM D 2419.
4. Conform to size and grade within the limits as follows when tested in accordance with ASTM C 117 and C 136:

Sieve Size (Square Openings)	Percent by Weight Passing Sieve
1 inch	100
3/4 inch	90-100
3/8 inch	40-100
Number 4	25-40
Number 8	18-33
Number 30	5-15
Number 50	0-7
Number 200	0-3

D. Drain Rock:

1. Durability: Percentage of wear not greater than 40 percent when tested in accordance with ASTM C 131.
2. Consist of hard, durable particles of stone or gravel, screened or crushed to specified size and gradation.
3. Free from organic matter, lumps or balls of clay, or other deleterious matter.
4. Crush or waste coarse material and waste fine material as required to meet gradation requirements.

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5. Conform to size and grade within the limits as follows when tested in accordance with ASTM C 117 and C 136:

Sieve Size (Square Openings)	Percent By Weight Passing Sieve
2 inch	100
1-1/2 inch	95-100
3/4 inch	50-100
3/8 inch	15-55
Number 200	0-2

E. Native material:

1. Sound, earthen material passing 1 inch sieve.
2. Percent of material by weight passing Number 200 sieve shall not exceed 30 when tested in accordance with ASTM D 422.
3. Expansion index less than 35 when tested in accordance with ASTM D 4829.

F. Sand:

1. Clean, coarse, natural sand.
2. Non-plastic when tested in accordance with ASTM D 4318.
3. One hundred percent shall pass a 1/2 inch screen.
4. No more than 20 percent shall pass a Number 200 sieve.

G. Select material:

1. Sound earthen material for which sum of plasticity index when tested in accordance with ASTM D 4318 and the percent of material by weight passing Number 200 sieve shall not exceed 23 when tested in accordance with ASTM D 422.
2. Organic content shall not be greater than 3 percent by volume.

H. Stabilization material:

1. Durability percentage of wear not greater than 40 percent when tested in accordance with California Test 211.
2. Consist of clean, hard, durable particles of crushed rock or gravel screened or crushed to the specified sizes and gradations.
3. Shall be free of any detrimental quantity of soft, friable, thin, elongated, or laminated pieces, disintegrated material, organic matter, oil, alkali, or other deleterious substance.
4. Shall be free of slaking or decomposition under the action of alternate wetting and drying.
5. The portion of material retained on the 3/8 inch sieve shall contain at least 50 percent of particles having three or more fractured faces. Not over 5 percent shall be pieces that show no such faces resulting from crushing. Of that portion which passes the 3/8 inch sieve but is retained on the No. 4 sieve, not more than 10 percent shall be pieces that show no faces resulting from crushing.

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6. Conform to size and grade when tested in accordance with ASTM C 117 and ASTM C 136.

Sieve Size (Square Openings)	Percent by Weight Passing Sieve
1 inch	100
3/4 inch	90-100
Number 4	0-10
Number 200	0-2

~~2.02~~ SOURCE QUALITY CONTROL (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

02050-5

SECTION 02100
SITE PREPARATION

PART 1 GENERAL

1.01 DESCRIPTION

- A. This Section specifies site preparation which consists of clearing, grubbing and demolition.

1.02 JOB CONDITIONS

- A. Existing Conditions
 - 1. The CONTRACTOR shall determine the actual condition of the site as it affects this portion of work.
- B. Protection
 - 1. Site preparation shall not damage structures, landscaping or vegetation adjacent to the site. The CONTRACTOR shall repair, or replace any damaged property.

1.03 SUBMITTALS

- A. Materials and plan to “slip” existing culvert.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 GENERAL

- A. The CONTRACTOR shall notify the CONSTRUCTION MANAGER when site preparation is complete.

3.02 PERFORMANCE

- A. Clearing and Grubbing
 - 1. Unless otherwise specified, the CONTRACTOR shall remove obstructions such as brush, trees, logs, stumps, roots, heavy sod, vegetation, rock, stones larger than 6-inches in any dimension, broken or old concrete and pavement, debris, and structures where the completion of the work require their removal.
 - 2. Material that is removed and is not to be incorporated in the work shall be disposed of off the site.
- B. Demolition and Removal
 - 1. Structures

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- a. Demolition and removal of structures consist of removal of abandoned superstructures, foundation walls, footings, slabs and any other structures. Excavations caused by existing foundations shall be cleared of waste, debris and loose soil, and refilled as specified.
2. Pavement
 - a. When portions of asphalt pavements and concrete pads are to be removed and later construction is to be connected, edges shall be saw cut, on a neat line at right angles to the curb face.
3. Salvage
 - a. The OWNER has the right to salvage any items scheduled for removal. The CONTRACTOR shall notify the CONSTRUCTION MANAGER five (5) days prior to any salvage or demolition work to determine the disposition of items to be removed. The CONSTRUCTION MANAGER will mark items to be salvaged. Such items shall be properly disconnected, removed from their foundations, cleaned, and stored at a location on the plant site as specified.

C. Utility Interference

1. The OWNER has endeavored to determine the existence of utilities at the site of the work from the records of the OWNERS of known utilities in the vicinity of the work. The positions of these utilities as derived from such records are shown on the drawings. No excavations were made to verify the locations shown for underground utilities. The service connections to these utilities are not shown on the drawings. It shall be the responsibility of the CONTRACTOR to determine the exact location of utilities and service connections thereto. The CONTRACTOR shall make his own investigations, including exploratory excavations, to determine the locations and type of existing utilities, including service connections, prior to commencing work which could result in damage to such utilities. The CONTRACTOR shall immediately notify the CONSTRUCTION MANAGER as to any utility discovered by him in a different position than shown on the drawings or which is not shown on the drawings.
2. In case it should be necessary to remove, relocate, or temporarily maintain a utility because of interference with the work, the work on the utility shall be performed and paid for as follows:
 - a. When it is necessary to remove, relocate, or temporarily maintain a service connection, the cost of which is not required to be borne by the OWNER thereof, the CONTRACTOR shall bear the expenses incidental to the work on the service connection. The work on the service connection shall be done in a manner satisfactory to the OWNER thereof; it being understood that the OWNER of the service connection has the option of doing such work with his own forces, or permitting the work to be done by the CONTRACTOR.
 - b. When it is necessary to remove, relocate, or temporarily maintain a utility which is in the position shown on the drawings, the cost of which is not required to be borne by the OWNER thereof, the CONTRACTOR shall bear the expenses incidental to the work on the utility. The work on the utility shall be done in a manner satisfactory to the OWNER thereof; it being understood that the OWNER of the utility has the option of doing such work with his own forces, or permitting the work to be done by the CONTRACTOR.
 - c. When it is necessary to remove, relocate, or temporarily maintain a utility which is not shown on the drawings or is in a position different from that

shown on the drawings and were it in the position shown on the drawings would not need to be removed, relocated, or temporarily maintained, the cost of which is not required to be borne by the OWNER thereof, the DISTRICT will make arrangements with the OWNER of the utility for such work to be done at no cost to the CONTRACTOR, or will require the CONTRACTOR to do such work in accordance with the article on changes in the work or will make changes in the alignment and grade of the work to obviate the necessity to remove, relocate, or temporarily maintain the utility.

3. No representations are made that the obligations to move or temporarily maintain the utility and to pay the cost thereof is or is not required to be borne by the OWNER of such utility, and it shall be the responsibility of the CONTRACTOR to investigate to find out whether or not said cost is required to be borne by the OWNER of the utility.
 4. The right is reserved to governmental agencies and to OWNERS of utilities to enter upon streets, alleys, rights of way, or easements for the purpose of making changes in their property made necessary by the work and for the purpose of maintaining and making repairs to their property.
- D. Existing Culverts and Creek Channel
1. Contractor shall take note that existing culvert and storm drain pipes may have compromised flowlines due to corrosion. Contractor shall take all precautions to protect said pipes and culverts in place.
 2. Where culverts convey stream flows, Contractor shall set up temporary measures to convey flows through the culvert without risking accidental diversion of creek flows into trench excavations. All temporary measures shall be installed and removed without disturbing the creek channel, by "slipping" the culvert with temporary pipe and sandbags. All work shall be set inside the existing pipe and installed under the inspection of a District representative. Temporary workings shall be removed by the Contractor before project completion. The material and temporary piping shall be submitted to the District for approval prior to installation.

END OF SECTION

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SECTION 02300

EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION

- A. This Section specifies earthwork, which consists of excavation, trenching, backfilling, grading, and excess material control.

1.02 DEFINITIONS

A. Compaction

- 1. The degree of compaction is specified as percent compaction. Maximum or relative densities refer to dry soil densities obtainable at optimum moisture content.

B. Excavation Slope

- 1. Excavation slope shall be defined as an inclined surface formed by removing material from below existing grade.

1.03 QUALITY ASSURANCE

A. Related Sections:

- 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- 2. It is the CONTRACTOR'S responsibility for scheduling and coordinating the work of SUBCONSULTANTS, SUPPLIERS, and other individuals or entities performing or furnishing any of the CONTRACTOR'S Work.

B. Submittals

- 1. Dewatering Plan describing in specific detail the Contractor's plan to dewater excavations.
- 2. Three copies and one original of the reports of the tests specified herein shall be submitted to the CONSTRUCTION MANAGER.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Fill materials shall be per Section 02318 – Trenching and Section 02050 Soils and Aggregates for Earthwork.

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PART 3 EXECUTION

3.01 GENERAL

A. Dewatering and Control of Water

1. The CONTRACTOR shall keep excavations reasonably free from water during construction. The static water level shall be drawn down a minimum of one foot below the bottom of excavations to maintain the undisturbed state of natural soils and allow the placement of any backfill to the specified density. Disposal of water shall not damage property, create a public nuisance or violate the law. The CONTRACTOR shall have on hand pumping equipment and machinery in good working condition for emergencies and shall have workmen available for its operation. Dewatering systems shall operate continuously until backfill has been completed to one foot above the normal static groundwater level.
2. Groundwater shall be controlled to prevent softening of the bottom of excavations or formation of "quick" conditions. Dewatering systems shall not remove natural soils.
3. Release of groundwater to its static level shall be controlled to prevent disturbance of the natural foundation soils or compacted backfill and to prevent flotation or movement of structures or pipelines.
4. Water pumped from excavations or the ground shall not be discharged into creeks or waterways.

B. Overexcavation

1. Where undisturbed condition of natural soils is inadequate for support of the planned construction as determined by the CONSTRUCTION MANAGER, the CONSTRUCTION MANAGER will direct the CONTRACTOR to overexcavate to adequate supporting soils. The excavated space shall be filled to the specified elevation with backfill. The quantity and placement of such material will be paid for as extra work.

C. Surplus Material

1. Unless otherwise specified, clean surplus excavated material shall be legally disposed of off-site by the CONTRACTOR. Hauling and disposal operations shall be conducted in accordance with applicable ordinances and environmental requirements. Rubbish and non-clean surplus excavated material, as determined by the CONSTRUCTION MANAGER, shall be legally disposed of off-site by the CONTRACTOR.
2. Material shall not be stockpiled to a depth greater than 5-feet above finished grade within 25-feet of any excavation. The CONTRACTOR shall maintain stability of the soil adjacent to any excavation.
3. If the quantity of surplus material is specified, the quantity specified is approximate. Shortage of material, caused by premature disposal of any material by the CONTRACTOR, shall be replaced by the CONTRACTOR.

D. Hauling

1. When hauling is done over highways or city streets, the loads shall be trimmed and the vehicle shelf areas shall be cleaned after each loading. The loads shall be watered after trimming to eliminate dust.

- E. Finish Grading
 1. Finished surfaces shall be smooth, compacted and free from irregularities. The degree of finish shall be that normally obtainable with a blade-grader.
 2. Finished grade shall be as specified by the contours plus or minus 0.10 foot except where a local change in elevation is required to match sidewalks, curbs, manholes, and catch basins, or to ensure proper drainage. Allowance for topsoil, grass cover and gravel, and subbase and pavement thickness shall be made so that the specified thickness of topsoil can be applied to attain the finished grade.
 3. When the work is at an intermediate stage of completion, the lines and grades shall be as specified plus or minus 0.5 foot to provide adequate drainage.
- F. Control of Erosion
 1. The CONTRACTOR shall maintain earthwork surfaces true and smooth and protected from erosion. Where erosion occurs, the CONTRACTOR shall provide fill or shall excavate as necessary to return earthwork surfaces to the grade and finish specified.

3.02 BACKFILL

- A. Backfill material shall be provided and placed in horizontal layers and compacted with power operated tampers, rollers, idlers, or vibratory equipment.
- B. Compaction of layers shall be accomplished in two passes of equipment with complete coverage across the width of the fill area.

3.03 EARTHWORK FOR STRUCTURES

- A. Structure Excavation
 1. Ground shall not be dug by open tooth machinery nearer than 3-inches from any finished subgrade. The last 3-inches shall be removed without disturbing the subgrade.
 2. The bottom shall not be more than 0.15 foot above or below the lines and grades specified. If the elevation of structure excavation is not specified, the excavation shall be not more than 0.15 foot above or below the elevation specified for fill material below the structure. Slopes shall vary no more than 0.5 foot from specified grade unless the excavation is in rock where the maximum variation shall be 2-feet.
 3. Should the excavation be carried below the lines and grades specified on the drawings or should the bottom of the excavation be disturbed because of the CONTRACTOR'S operations and require overexcavation and backfill, the CONTRACTOR shall refill such excavated space to the proper elevation in accordance with the procedure specified for backfill.
 4. Unless otherwise specified, excavations shall extend a sufficient distance from walls and footings to allow for placing and removal of forms, installation of services, and for inspection, except where concrete is specified to be placed directly against excavated surfaces.
- B. Foundation Treatment

1. Foundations for concrete or masonry footings shall be excavated to sound material. Sound material shall be imported as required.
2. When swell or subsidence results, the CONTRACTOR shall excavate, or backfill the footing area to the grade of the bottom of the footing with suitable material as specified. If material under footings is such that it would mix into the concrete during footing placement or would not support the weight of the fluid concrete, the CONTRACTOR shall replace the material with suitable material, install soffit forms or otherwise provide a suitable platform on which to cast the footing as directed by the CONSTRUCTION MANAGER. This shall not be paid for as extra work.
3. Whenever any structure excavation is substantially completed to grade, the CONTRACTOR shall notify the CONSTRUCTION MANAGER who will make an inspection of the foundation. No concrete or masonry shall be placed until the foundation has been inspected by the CONSTRUCTION MANAGER. The CONTRACTOR shall, if directed by the CONSTRUCTION MANAGER, dig test pits and make test borings and foundation bearing tests. If the material tested is undisturbed soil, the cost thereof will be paid for as extra work. If the material tested is backfill material, the cost thereof will be paid as extra work only if it meets all specified placement and compaction requirements.

C. Structure Backfilling

1. Unless otherwise specified, structure backfill shall be Class F1.
2. After completion of construction below the elevation of the final grade, and prior to backfilling, forms shall be removed and the excavation shall be cleaned of debris.
3. Structure backfill shall not be placed until the subgrade portions of the structure have been inspected by the CONSTRUCTION MANAGER. No backfill material shall be deposited against concrete structures until the concrete has developed strength of not less than 3,000 pounds per square inch in compression.
4. Backfill material shall be placed in uniform layers and shall be brought up uniformly on all sides of the structure. Compaction by ponding, flooding, or jetting is not allowed.
5. If the compacted surface of any layer of material is too smooth to bond properly with the succeeding layer, the surface shall be scarified. If required, the surface shall be sprinkled, or otherwise moisture conditioned before the succeeding lift is placed. Any surface crust formed on a layer of fill material that has been dumped and spread shall be broken up by harrowing and, if required, the full depth of the affected layer shall be moisture conditioned immediately prior to rolling.
6. Unless otherwise specified, backfill around and above pipelines within the excavation line of any structure shall be the same as that specified for structures.

END OF SECTION

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SECTION 02318

TRENCHING

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Trench excavation, excavation stabilization, fine grading, pipe bedding, backfilling, and compaction for the following, including requirements for ditch crossings:
 - 1. Pipes.
 - 2. Direct buried electrical and control conduits.
 - 3. Electrical and control duct banks.
 - 4. Manholes, valves, or other accessories.
 - 5. Potable water pipe appurtenances.

- B. Related sections:
 - 1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 - 2. It is the CONTRACTOR'S responsibility for scheduling and coordinating the Work of SUBCONTRACTORS, SUPPLIERS, and other individuals or entities performing or furnishing any of CONTRACTOR'S Work.
 - 3. The following sections are related to the Work described in this Section. This list of related sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the CONTRACTOR to see that the completed Work complies accurately with the Contract Documents.
 - a. Section 02050 – Soils and Aggregates for Earthwork.
 - b. Section 02300 - Earthwork.

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand Cone Method.
 - 2. D 1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft lbf/ft³ (2,700 kN m/m³)).
 - 3. D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 4. D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.03 SUBMITTALS

- A. Lab certification.
- B. Confirmation test reports.

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- C. For trench excavations 5 feet or more in depth and for trenches less than 5 feet in depth when there is a potential for cave-in. Submit in advance of excavation work, detailed drawings showing means for safe and stable excavations:
 - 1. Where such drawings vary from excavation support standards set forth in California Code of Regulations Title 8 – Construction Safety Orders, submit design calculations pursuant to general engineering design practice.
 - 2. Provide means for safe and stable excavations that are not less effective than required in CCR Title 8 – Construction Safety Orders.
 - 3. If shoring is proposed or required, submit sequence of installation and removal, sketches of any utility penetrations, control points, and schedule or measurements.

1.04 QUALITY ASSURANCE

- A. Initial compaction demonstration:
 - 1. Adequacy of compaction equipment and procedures: Demonstrate adequacy of compaction equipment and procedures before exceeding any of following amounts of earthwork quantities:
 - a. 200 linear feet of trench backfill.
 - 2. Compaction sequence requirements: Until specified degree of compaction on previously specified amounts of earthwork is achieved, do not perform additional earthwork of the same kind.
 - 3. After satisfactory conclusion of initial compaction demonstration and at any time during construction, provide confirmation tests as specified under "FIELD QUALITY CONTROL."

PART 2 PRODUCTS

2.01 MATERIALS

- A. Soil and rock materials as specified in Section 2050 – Soils and Aggregates for Earthwork:

PART 3 EXECUTION

3.01 PREPARATION

- A. General:
 - 1. Embankment condition:
 - a. Exists where width of trench exceeds limits specified in this Section.
 - b. Before laying pipes in fill, place fill and compact it to not less than 2 feet above top of pipe.
 - c. After placing and compacting fill, excavate pipe trench through fill.
- B. Protection: Stabilize trench excavations:
 - 1. Support faces of excavations and protect structures and improvements in vicinity of excavations from damage and loss of functions due to settlement or movement of soils, alterations in ground water level caused by such excavations, and related operations.

2. Provide safe and stable excavations by means of sheeting, shoring, bracing, sloping and other means and procedures, such as draining and recharging groundwater and routing and disposing of surface runoff, required to maintain the stability of soils and rock.
3. Provide support for trench excavations for protection of workers from hazard of caving ground.
4. Provide shoring:
 - a. Where, as a result of excavation work and analysis performed pursuant to general engineering design practice:
 - 1) Excavated face or surrounding soil mass may be subject to slides, caving or other types of failures.
 - 2) Stability and integrity of structures and other improvements may be compromised by settlement or movement of soils, or changes in soil load on structures and other improvements.
 - b. For trenches 5 feet and deeper.
 - c. For trenches less than 5 feet in depth, when there is a potential for cave-in.

3.02 INSTALLATION

A. Trench excavation:

1. General requirements:
 - a. If, because of soil conditions, safety requirements, or other reasons, trench width at top of pipe is increased beyond width specified in this Section, upgrade laying conditions or install stronger pipe designed in conformance with Specifications for increased trench width, without additional cost to OWNER.
 - b. Excavate bottom of trench to depth indicated on the Drawings. The bottom of the trench excavation shall be firm and dry.
2. The trench may be excavated by machinery to the grade indicated on the Drawings provided that the soil material remaining in the bottom of the trench is no more than slightly disturbed. Scarify and recompact bottom of trench: Scarify bottom of trench to a depth of 6 inches. Recompact scarified material to 95 percent of maximum density.
3. Rock:
 - a. Pipe: If bottom of trench excavation is found to consist of rock or any material that by reason of its hardness cannot be excavated to provide uniform bearing surface, remove such rock or other material to a depth of not less than 4 inches below bottom of fine grading material. Backfill overcut with aggregate base course material compacted to 95 percent of maximum density up to bottom of fine grading material.
4. Overcut of trench bottom: Where the bottom of the trench is excavated below the depth indicated on the Drawings, restore trench bottom to proper grade by back filling with aggregate base course material compacted to 95 percent of maximum density, at no additional cost to OWNER.
5. Soft or unstable material:
 - a. If bottom of excavation is found to consist of soft or unstable material which is incapable of providing proper support, remove such material to a depth and for the length required, as determined by the ENGINEER. Backfill trench to

bottom of fine grading material with aggregate base course material compacted to 90 percent of maximum density.

6. Trench widths:
 - a. Minimum clear width of trench for pipe (measured at top of pipe):
 - 1) For pipe sizes 4 inches to and including 24 inches: Not less than outside diameter of pipe plus 18 inches.
 - 2) For pipe sizes larger than 24 inches: Not less than outside diameter of pipe plus 24 inches.
 - b. Maximum clear width of trench for pipe (measured at top of pipe):
 - 1) For pipe sizes 4 inches to and including 24 inches: Not to exceed outside diameter of pipe plus 24 inches.
 - 2) For pipe sizes larger than 24 inches: Not to exceed outside diameter of pipe plus 36 inches.
 7. For manholes, valves, or other accessories:
 - a. Provide excavations sufficient to leave at least 12 inches clear between their outer surfaces and sides of trench or shoring.
 - b. Backfilling of manhole excavation: Conform to backfilling requirements as specified for trenches in this Section.
 - c. Backfill under manholes, vaults, tanks, or valves with aggregate base course material. Do not backfill with soil.
 - d. Fill any unauthorized excess excavation below elevation indicated on the Drawings for foundation of any structure with aggregate base course material at no additional cost to OWNER.
 8. Potable water pipe appurtenances:
 - a. Lay in trenches separate from those used for sewers.
 - b. Unless otherwise specified or indicated on the Drawings, lay in trenches having cover of not less than 3 feet below surface of ground and located at distance of not less than 10 feet from any parallel sewer trench.
 9. At road crossings or existing driveways:
 - a. Make provision for trench crossings at these points, either by means of backfills, tunnels, or temporary bridges.
- B. Dewatering: Refer to Section 02300 Earthwork.
- C. Pipe fine grading:
1. Schedule fine grading material as specified in this Section.
 2. For pipes 16 inches in nominal diameter and under.
 - a. Place 4 inches of fine grading material below bottom of pipe.
 - b. Place fine grading material at uniform density, with minimum possible compaction.
 3. For pipe over 16 inches in diameter.
 - a. Place 4 inches, or 1/12 the outside diameter of pipe, whichever is greater, of fine grading material below bottom of pipe.
 - b. Place fine grading material at uniform density, with minimum possible compaction.
 4. Bell or coupling holes:
 - a. Dig holes after trench bottom has been graded.
 - b. Provide holes of sufficient width to provide ample room for grouting, banding, or welding.

- c. Excavate holes only as necessary for making joints and to ensure that pipe rests upon prepared trench bottom and not supported by any portion of the joint.
 - 5. Depressions for joints, other than bell-and-spigot:
 - a. Make in accordance with recommendations of joint manufacturer for particular joint used.
- D. Pipe bedding:
 - 1. Schedule bedding material as specified in this Section.
 - 2. After pipe laid:
 - a. Place bedding material under and around pipe in 6 inch maximum lifts of bedding material, to level 12 inches above top of pipe. Compact to 90 percent of maximum density.
 - 3. Pipe displacement:
 - a. Take necessary precautions in placement and compaction of bedding material to prevent displacement of piping.
 - b. In event there is movement or floating of the piping, re-excavate, re-lay, and backfill the pipe.
- E. Trench backfill above pipe bedding, electrical and control conduit bedding, and electrical and control ductbanks:
 - 1. Under structures:
 - a. Backfill trench up to underside of structure with aggregate base course material as specified in Section 2050 – Soils and Aggregates for Earthwork: compacted to 95 percent of maximum density or controlled low-strength material.
 - 2. Cuts across roadways and paved streets:
 - a. Backfill trench to underside of pavement with aggregate base course material as specified in Section 2050 – Soils and Aggregates for Earthwork: compacted to 95 percent of maximum density.
 - 3. Under and parallel to roadways, paved areas, or storage areas:
 - a. Backfill trench up to within 2 feet of finish grade with native material compacted to 95 percent of maximum density.
 - b. Then backfill from 2 feet below finish grade to finish grade, or underside of aggregate base course or pavement as indicated on the Drawings with aggregate base course material as specified in Section 2050 – Soils and Aggregates for Earthwork:, compacted to 95 percent of maximum density.
 - 4. In areas outside the improved section of roadways or in open country:
 - a. Backfill to finish grade with native material as specified in Section 2050 – Soils and Aggregates for Earthwork: compacted to 90 percent of maximum density.
 - 5. Through earth slopes adjacent to, or supporting structures:
 - a. Backfill to finish grade with aggregate base course material or select material compacted to 95 percent of maximum density.
- F. Under existing intersecting pipes or conduits larger than 3 inches in diameter:
 - 1. Backfill from bottom of new pipe trench to spring line of intersecting pipe or conduit with aggregate base course material, as specified in Section 2050 – Soils and Aggregates for Earthwork:, compacted to 90 percent of maximum density.

2. Extend aggregate base course material as specified in Section 2050 – Soils and Aggregates for Earthwork: two feet on either side of intersecting pipe or conduit to ensure that material remains in place while other backfill is being placed.
3. Backfill remainder of trench as specified in “Trench backfill above pipe bedding and for conduits and duck banks” above.

G. Compaction:

1. In-place density of compacted trench backfill, and bedding determined in accordance with ASTM D 1556, or with ASTM D 2922 and ASTM D 3017.
2. Maximum density obtained in laboratory when tested in accordance with ASTM D 1557.
3. Consolidation:
 - a. Do not use water settling methods such as flooding, poling, or jetting.

H. Excess material:

1. Remove excess excavated material from the Project site as specified in Section 02300 Earthwork and dispose of legally off site.

3.03 FIELD QUALITY CONTROL

A. Tests:

1. Confirmation tests:

a. CONTRACTOR'S responsibilities:

- 1) Accomplish specified compaction of trench backfill.
- 2) Control operations by confirmation tests to verify and confirm that compaction work complies, and is complying at all times, with requirements specified in this Section concerning compaction, control, and testing.
- 3) Cost of confirmation tests: Paid for by the CONTRACTOR.
- 4) Qualifications of CONTRACTOR'S testing laboratory: Acceptable to ENGINEER. Provide lab certification.
- 5) Copies of confirmation test reports: Submit promptly to the ENGINEER.

b. Frequency of Confirmation testing:

- 1) Perform testing not less than as follows:
 - a) For trenches: At each test location include tests for each type or class of backfill from bedding to finish grade.
 - b) For each length of water main between structures: two (2) locations as determined by the inspector.
 - c) For storm drain line: two (2) locations for each size of pipe.
 - d) Crossing paved roads: two (2) locations along each crossing.
 - e) For sewer lateral: two (2) locations outside of the public right-of-way.

2. Compliance tests:

- a. Frequency of testing: Periodic compliance tests will be made by the ENGINEER to verify that compaction is meeting requirements previously specified.
- b. If compaction fails to meet specified requirements: Perform remedial work by one of the following methods:

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- 1) Remove and replace backfill at proper density.
 - 2) Bring density up to specified level by other means acceptable to the ENGINEER.
3. Retesting:
- a. Costs of retesting: CONTRACTOR is responsible for the costs of retesting required to confirm and verify that remedial work has brought compaction within specified requirements.
 - b. CONTRACTOR'S confirmation tests during performance of remedial work:
 - 1) Performance: Perform tests in manner acceptable to the ENGINEER.
 - 2) Frequency: Double amount specified for initial confirmation tests.

3.04 SCHEDULES

- A. Pipe fine grading materials:
1. Fine grading material shall be the same as bedding material.
- B. Bedding materials:
1. Pipes:
 - a. For pipe less than 16-inch nominal size: Except as otherwise specified, use sand or aggregate base course material.
 - b. For pipe from 16- inch to 48-inch nominal size: Except as otherwise specified, use sand or aggregate base course material.
 - c. For pipe over 48 inches: Aggregate base course material.
 - d. For polyvinyl chloride or other plastic pipe less than 2 inches in diameter: Sand.
 2. Direct buried electrical and control conduits: Sand.

END OF SECTION

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SECTION 02460

ASPHALT CONCRETE PAVEMENT AND BASE

PART 1 GENERAL

1.01 REQUIREMENT

- A. The CONTRACTOR shall perform all work associated with Asphalt Concrete (AC) Pavement and Base, as shown and as specified herein including all labor, materials, equipment supplies, and facilities associated with providing a finished product satisfying all the requirements of the Contract Documents.

1.02 SUMMARY

- A. Section includes the restoration of surface as well as the addition of new surface improvements.
- B. Related sections:
1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
 2. It is the CONTRACTOR'S responsibility for scheduling and coordinating the work of SUBCONTRACTORS, SUPPLIERS, and other individuals or entities performing or furnishing any of CONTRACTOR'S work.
 3. The following sections are related to the Work described in this Section. This list of related sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the CONTRACTOR to see that the completed work complies accurately with the Contract Documents.
 - a. Section 02300 - Earthwork.

1.03 REFERENCES

- A. This Section references the following documents. They are a part of this Section as specified and modified. In case of conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.

<u>Reference</u>	<u>Title</u>
CALTRANS	Standard Specification, State of California Business Transportation Agency, Department of Transportation, Latest Edition

1.04 CONTRACTOR SUBMITTALS

- A. The CONTRACTOR shall submit, in writing, materials testing reports, job-mix formulas, and other pertinent information satisfactory to the ENGINEER demonstrating the materials and methods the CONTRACTOR proposes to utilize will

comply with the provisions of this Section. Submittals shall be in accordance with Section 01330 Submittal Procedures.

- B. Suitability Tests of Proposed Materials: Tests for conformance with the Specifications shall be performed prior to start of the Work. The samples shall be identified to show the name of the material, aggregate source, name of the supplier, contract number, and the segment of the Work where the material represented by the sample is to be used. Results of all tests shall be submitted to the ENGINEER for approval. Materials to be tested shall include aggregate base, coarse and fine aggregate for paving mixtures, mineral filler, and asphalt cement.

PART 2 PRODUCTS

2.01 AGGREGATE BASE

- A. Materials for aggregate base shall be Class 2 Aggregate Base, as specified in Section 02300 Earthwork.

2.02 PRIME COAT

- A. Prime coat shall be Grade SC-70 liquid asphalt complying with the requirements of Caltrans Section 93. Grade SC-250 liquid asphalt may be used when acceptable to the ENGINEER.

2.03 TACK COAT

- A. Tack coat shall be emulsified asphalt Grade SS-1h or undiluted asphalt Grade RS- 1. Emulsified asphalt shall comply with the requirements of Caltrans Section 94; paving asphalt shall comply with the requirements of Caltrans Section 92.

2.04 ASPHALT CEMENT

- A. Aggregate shall be Type B, 2-inch maximum medium grading, conforming to Caltrans Section 39. Asphalt binder shall be paving asphalt, Grade PG 64-10, and shall comply with Caltrans Section 92. Asphalt concrete mixing and proportioning shall comply with Caltrans Section 39. The minimum acceptable asphalt content shall be 5.3 percent of the dry aggregate weight.

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION

- A. The subgrade shall be prepared as specified in the Section 02300 Earthwork as applicable to roadways and embankments. The surface of the subgrade after compaction shall be hard, uniform, smooth, and true to grade and cross-section. Subgrade for pavement shall not vary more than 0.02 foot from the specified grade and cross-section. Subgrade for base material shall not vary more than 0.04-foot from the specified grade and cross-section.

3.02 AGGREGATE BASE

- A. Aggregate base shall be provided where shown and to the thickness shown. Imported aggregate bases shall be delivered to the job site as uniform mixtures and each layer shall be spread in one operation. Segregation shall be avoided and the base shall be free of pockets of coarse or fine material. Where the required thickness is 6-inches or less, the base materials may be spread and compacted in one layer. Where the required thickness is more than 6-inches, the base material shall be spread and compacted in two or more layers of approximately equal thickness and the maximum compacted thickness of any one layer shall not exceed 6-inches. The relative compaction of each layer of aggregate base shall be not less than 95 percent of maximum density when measured in accordance with California Test 231. The compacted surface of the finished aggregate shall be hard, uniform, smooth, and at any point shall not vary more than 0.05 foot from the specified grade or cross-section.

3.03 PRIME COAT

- A. Prior to placing of pavement, a prime coat of liquid asphalt shall be applied to the compacted base or subgrade at a rate between 0.10 and 0.25 gal/sq yd. As much prime coat shall be applied to the prepared base as will soak in during a twenty four (24) hour period without puddling. Sand cover shall be applied at driveways, intersections, and to roadbed surface where continuous traffic access must be maintained.

3.04 TACK COAT

- A. A tack coat shall be applied to existing paved surfaces where new asphalt concrete is to be placed on existing pavement. It shall also be applied to the contact surfaces of all cold pavement joints, curbs, gutters, manholes and the like immediately before the adjoining asphalt pavement is placed. Care shall be taken to prevent the application of tack coat material to surfaces that will not be in contact with the new asphalt concrete pavement. Diluted emulsified asphalt shall be applied at the rate of 0.05 to 0.15 gal/sq yd. Undiluted emulsified asphalt shall be applied at the rate of 0.025 to 0.075 gal/sq yd. Paving asphalt shall be applied at the rate of approximately 0.05 gal/sq yd.

3.05 ASPHALT CONCRETE

- A. At the time of delivery to the Work site, the temperature of the mixture shall not be lower than 260 degrees Fahrenheit or higher than 320 degrees Fahrenheit, the lower limit to be approached in warm weather and the higher in cold weather.
- B. Asphalt concrete shall not be placed when the atmospheric temperature is below 50 degrees F or during unsuitable weather.
- C. The asphalt concrete shall be evenly spread upon the subgrade or base to such a depth that, after rolling, it will be of the specified cross-section and grade of the course being constructed.

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- D. The depositing, distributing, and spreading of the asphalt concrete shall be accomplished in a single, continuous operation by means of a self-propelled mechanical spreading and finishing machine designed especially for that purpose. The machine shall be equipped with a screed or strike-off assembly capable of being accurately regulated and adjusted to distribute a layer of the material to a definite pre-determined thickness. When paving is of a size or in a location that use of a self-propelled machine is impractical the ENGINEER may waive the self-propelled requirement.
- E. Spreading, once commenced, must be continued without interruption.
- F. The mix shall be compacted immediately after placing. Initial rolling with a steel-wheeled tandem roller, steel three-wheeled roller, vibratory roller, or a pneumatic-tired roller shall follow the paver as closely as possible. If needed, intermediate rolling with a pneumatic-tired roller shall be done immediately behind the initial rolling. Final rolling shall eliminate marks from previous rolling. In areas too small for the roller a vibrating plate compactor or a hand tamper shall be used to achieve thorough compaction.
 - 1. Refer to Drawings for required dimensions and thicknesses of trench pavement restoration.
- G. Upon completion, the pavement shall be true to grade and cross-section. When a 10 foot straightedge is laid on the finished surface parallel to the center of the roadway, the surface shall not vary from the edge of the straightedge more than 1/8-inch except at intersections or changes of grade. In the transverse direction, the surface shall not vary from the edge of the straightedge more than 1/4-inch.
- H. The relative density after compaction shall be 95 percent of the density obtained by using California Test 375. A properly calibrated nuclear asphalt testing device shall be used for determining the field density of compacted asphalt concrete, or the density shall be obtained using California Test 308, Method A.
- I. CONTRACTOR shall restore all pavement markings (paint and thermoplastic) and lane divider marks (dots) to original location and condition in kind.

END OF SECTION

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SECTION 02530
SANITARY SEWERAGE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Furnish and install all piping as shown on the Drawings, described in the Specifications and as required for a complete and operable system.
- B. Related Sections:
 - 1. Section 02300 - Earthwork.
 - 2. Section 01510 – Sewer Bypass Pumping.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. C923 Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals
 - 2. D3034 Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
 - 3. D3212 Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
 - 4. F477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

1.03 SUBMITTALS

- A. Submit the following to the ENGINEER for review:
 - 1. Data to show that the products specified in this Section conform to the Specification requirements.
 - 2. Leakage testing plan.
 - 3. Test results as required herein.

1.04 QUALITY ASSURANCE

- A. All materials and equipment furnished under this Section shall be of a manufacturer who has been regularly engaged in the design and manufacture of the materials and equipment for a period of at least five years.
- B. Factory Quality Control: The CONTRACTOR shall test all products as required herein and by the reference specifications.
- C. Field Quality Control:
 - 1. The OWNER will inspect the work and witness testing.
 - 2. The CONTRACTOR shall:

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- a. Perform leakage tests.
- b. Perform mandrel tests.
- c. Be responsible for the costs of additional inspection by the OWNER from non-compliance.

1.05 POTHOLING (NOT USED)

PART 2 PRODUCTS

2.01 GENERAL

- A. Pipe sizes are nominal diameter unless otherwise noted.
- B. All materials delivered to the job site shall be new, free from defects, and marked to identify the material, class, and other appropriate data such as thickness for piping.
- C. Acceptance of materials shall be subject to strength and quality testing in addition to inspection of the completed product. Acceptance of installed piping systems shall be based on inspection and leakage tests as specified hereinafter.

2.02 POLYVINYL CHLORIDE PIPE (PVC)

- A. Pipe and Fittings:
 - 1. Gravity Sewer: Polyvinyl chloride sewer pipe; ASTM D3034, SDR 35.
 - 2. Pressure Sewer: Polyvinyl chloride sewer pipe; ANSI/AWWA C900.
- B. Joints:
 - 1. Gravity Sewer: Elastomeric gasket joints; ASTM D3212, ASTM F477.
 - 2. Pressure Sewer: Integral Bell Joint; ASTM D3139, Gasket; ASTM F477.

2.03 DETECTABLE WARNING TAPE

- A. A continuous detectable underground warning tape shall be installed in the trench not less than 18-inches or greater than 24 inches above the sewer pipe. The tape shall be printed with diagonal warning stripes conforming to APWA color recommendations (GREEN for sewer) and bold, black legends identify what type of utility line is buried below. Minimum tape width shall be 3 inches.

2.04 DUCTILE IRON PIPE (DIP) (NOT USED)

2.05 VITRIFIED CLAY PIPE (NOT USED)

2.06 CONNECTION DEVICES

- A. Flexible and Transition Couplings for Gravity Sewer: Flexible and transition couplings shall be elastomeric plastic or synthetic rubber resistant to sewage and grease, chemicals and normal sewer gases. Couplings shall be designed to slip over the outside of the pipes being connected with a snug fit. Coupling shall be held in place and sealed with full circle stainless steel shear band and two stainless steel band clamps, one around each end. Couplings shall be specifically manufactured for

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making the transition between various types of pipe with different outside diameters. Couplings shall meet the requirements of the Uniform Plumbing Code. No concentric coupling reducers or donut transition couplings will be allowed. The following are acceptable couplers:

1. PVC SDR-35 Slip Couplers.
2. Romac 1000 Series and/or 5000 Series "Shear" coupler (or approved equal).
3. Romac SSI Full Circle Clamp (or approved equal).

B. Flexible and Transition Couplings for Pressure Sewer:

1. Mechanical Joint Sleeve.
2. Fernco with stainless steel bands.

C. Other Devices: Other equivalent connection devices will be considered provided that they are made of elastomers resistant to sewage and grease, chemicals and normal sewer gases. Metallic parts shall be stainless steel.

2.07 APPURTENANCES

- A. Furnish and install all necessary guides, inserts, anchors and assembly bolts; washers and nuts, hangers, supports, gaskets, and flanges; all other appurtenant items shown on the Drawings, specified or required for the proper installation and operation of the piping; devices included in or on the piping equipment; and piping accessories.

PART 3 EXECUTION

3.01 FLOW CONTROL AND SEWER BYPASS

- A. Divert sewage flows and storm water around all sewer and drain replacement work areas, including building connection sewer replacement. Furnish, install, and operate pumps, plugs, conduits, and other equipment as needed to divert the flow of sewage around the pipeline reach in which work is to be performed. Plugs shall be designed so that all or any portion of the sewage can be released. The plug shall be provided with a tag line. The pumping system shall be of sufficient capacity to handle existing flow plus additional flow that may occur during a rainstorm. If pumping is required on a 24-hour basis and engine drives are required, engines shall be equipped in a manner to keep noise to a minimum. Standby pumps shall be provided as required. Pumping shall be done in such manner as will not damage public or private property or create a nuisance or health menace. After the work has been completed, flow shall be restored to normal. Existing sewers to be abandoned shall be disconnected after the new service is operating.
- B. Refer to Section 01510 Sewer Bypass Pumping for details regarding bypass pumping system requirements.
- C. Notify residents of the impending work and request their cooperation to minimize flows shortly before working in each area.

3.02 BUILDING CONNECTION REPLACEMENT (NOT USED)

3.03 PIPING INSTALLATION

A. Storage and Handling:

1. Great care shall be exercised to prevent damage to the pipe during handling, transportation or storage. Pipe shall not be stored on rough ground and rolling of the pipe on the coating will not be permitted. Any damaged pipe sections shall be repaired or replaced at the expense of the CONTRACTOR to the satisfaction of the ENGINEER.
2. Store polyvinyl chloride pipe under opaque covers which do not transmit ultraviolet light.
3. Each pipe section shall be carefully inspected before installation, and all damaged areas replaced to the satisfaction of the ENGINEER. All costs associated with the removal and/or replacement of damaged or defective pipe as determined by the ENGINEER shall be borne by the CONTRACTOR.

B. General Piping Installation:

1. Trenching, bedding, and backfill for buried piping shall be as shown on the Drawings and as specified in Section 02300 Earthwork.
2. Lay each length of pipe on a firm bed with a true bearing for its entire length between bell holes. Excavate holes of only sufficient size to accommodate the bell at each joint location. Adjust line and grade by scraping away, filling in and tamping the earth to provide true grade to fit the barrel of the pipe. No wedging or blocking up of the pipe shall be permitted. The trench and bell holes shall be kept free from water during the laying of the pipe.
3. Except when noted specifically otherwise on the Drawings, whenever piping leaves a structure, concrete encasement, or concrete bedding, a joint capable of angular deflection shall be provided within 12 inches of the structure, encasement or bedding.
4. All dirt and foreign matter shall be removed from the pipe interior prior to installation and all joints shall be thoroughly cleaned before joining.
5. Plug open ends of pipe when construction is not underway.
6. Lay pipe upgrade with bell end uphill, unless specifically shown otherwise.
7. After making each joint, rigidly secure the pipe in place by backfilling to the top of the pipe at the center, but not as to fill the bell hole nor interfere with the next jointing operation. Use appropriate compaction equipment (e.g., hand held powder puff, etc.) to work the pipe bedding underneath the haunches of the pipe, along the side of the pipe, and over the top of the pipe as shown on the Drawings to receive the required compaction.

C. Installation Specifics:

1. Polyvinyl chloride pipe for sewer mains and laterals:
 - a. Install pipe in accordance with the manufacturer's instructions, except that the minimum radius of curvature for a pipeline shall be no less than twice the minimum radius published in the pipe manufacturer's instructions and deflection angles within fittings shall be no more than half of the maximum deflection angle published in the manufacturer's instructions.

- b. Place pipe within the installation areas at least 24 hours prior to installation to permit temperature equalization.
 - c. Pipe ends shall be cut squarely, reamed and deburred inside and out.
 - d. Clean pipe ends and bells of dirt, grease and other foreign materials prior to making the joint.
2. Comply with Standard Specifications for Public Works Construction maximum deviation from line and grade.

3.04 CLEANING

- A. Prior to testing, and before connecting new sewer to existing sewer system, the inside of each sewer main and public sewer lateral shall be thoroughly cleaned of all dirt, loose scale, sand and other foreign material. Cleaning shall be by flushing with water or bailing as appropriate for the size and type of the pipe and method of cleaning shall be favorably reviewed by the ENGINEER. Do not allow dirt and debris to enter existing sewer system. CONTRACTOR shall be responsible for collecting discharge cleaning water and disposing of it at the OWNER'S wastewater treatment plant ponds. CONTRACTOR shall not discharge cleaning water into existing sewer unless otherwise approved by the OWNER. The OWNER will provide water for sewer cleaning at no additional cost to the CONTRACTOR. CONTRACTOR shall provide valving and backflow protecting per OWNER'S approval at temporary water connection(s).

3.05 PERMANENT PLUGS

- A. Clean interior contact surfaces of all pipes to be cut off or abandoned. Construct a non-shrink grout plug in the end of all pipes unless otherwise specified. Minimum length of non-shrink grout plugs shall be 6 inches. All plugs shall be watertight and capable of withstanding all internal and external pressures without leakage.

3.06 LEAKAGE TESTS

- A. General:
 1. Perform leakage tests on all sewer mains and public sewer laterals installed in this Project.
 2. Furnish all equipment, materials, personnel, and supplies to perform the tests.
 3. Pressure gauges and metering devices shall be of a type, accuracy and calibration acceptable to the ENGINEER. The ENGINEER may require certification of the gauges and meters by an independent testing firm at the CONTRACTOR'S expense.
 4. Leakage tests shall be performed on all piping at a time agreed upon and in the presence of the ENGINEER.
- B. The leakage test shall be made after all pipe is installed and backfilled. If testing is not completed prior to placing permanent resurfacing or other surface restoration, the CONTRACTOR shall be responsible for the cost to remove and replace pavement or other restored surface features to correct the sewer pipelines or manholes due to a failed test. The CONTRACTOR may conduct preliminary tests prior to backfill at no additional cost to the OWNER. If the CONTRACTOR elects to conduct preliminary

tests, he shall provide any necessary temporary thrust restraint, and shall retest as set forth herein.

- C. Test Procedure for Gravity Sewer: Leakage tests shall be air pressure tests conducted as follows:
1. Furnish all materials, equipment and labor for making an air test. Air test equipment shall be favorably reviewed by the ENGINEER.
 2. The CONTRACTOR may conduct at his expense an initial air test of the sewer main after densification of the backfill, but prior to installation of the public sewer laterals. Such tests will be considered to be for the CONTRACTOR'S information and need not be performed in the presence of the ENGINEER.
 3. Each section of sewer mains and public sewer laterals shall be tested between successive manholes, or in sections if favorably reviewed by the ENGINEER, by plugging and bracing all openings in the sewer main and the upper ends of all sewer laterals. Prior to any air pressure testing, all pipe plugs shall be checked with a soap solution to detect any air leakage. If any leaks are found, the air pressure shall be released, the leaks eliminated, and the test procedure started over again. The CONTRACTOR has the option of wetting the interior of the pipe prior to the test.
 4. The final leakage test of the sewer main and public sewer laterals shall be conducted in the presence of the ENGINEER as per 5 through 6 below.
 5. Air shall be introduced into the pipeline until 4.0 psi (27kPa) gage pressure has been reached; or if groundwater is present, 4.0 psi (27kPa) above the computed pressure exerted by the average adjacent groundwater. Reduce the flow of air and maintain the air pressure within plus or minus 0.5 psi (3kPa) for at least two minutes to allow the internal air temperature to reach equilibrium. Terminate flow of air into the pipeline. Pressure in the pipeline shall be constantly monitored by a gage and hose arrangement separate from hose used to introduce air into the line. A blowoff valve shall be provided on the test apparatus to prevent over pressurizing the pipeline.
 6. After the temperature has stabilized and no air leaks at the plugs have been found, the air pressure shall be permitted to drop until the internal pressure has reached 3.0 psi (21kPa) gage pressure; or when groundwater is present, 3.0 psi (21kPa) above the computed pressure exerted by the average adjacent groundwater. A stopwatch or sweep-second-hand watch shall be used to determine the time lapse required for the air pressure to decrease an additional 1.0 psi (7kPa).
 7. If the time lapse (in seconds) required for the air pressure to decrease the additional 1.0 psi (7kPa) exceeds that shown in the Table, Low Pressure Air Test for Sewers, in the Standard Specifications for Public Works Construction, the pipe shall be presumed to be within acceptance limits for leakage.
 8. If the time lapse is less than that shown in this table, the CONTRACTOR shall make the necessary corrections to reduce the leakage to acceptance limits without additional compensation.

T = Time in seconds for pressure to drop to 2.5 psi (17kPa) gage pressure.

D = Inside diameter of pipe in inches (mm).

3.07 MANDREL TEST OF POLYVINYL CHLORIDE PIPE

- A. Deflection Testing: Maximum allowable deflection (reduction in vertical inside diameter) of the installed pipe shall not exceed 5%. The CONTRACTOR shall provide acceptable 9-prong mandrel, or other approved device to check the maximum allowable deflection of pipes 21 inches in diameter and smaller thirty (30) days after installation. Testing must be performed by hand pulling a nine-point mandrel a diameter of 95% of the average inside diameter. The allowable limits shall be:

Pipe Diameter	Maximum Allowable Sag
4-inch	1/4-inch
6-inch	3/8-inch
8-inch to 10-inch	1/2-inch
12-inch	3/4-inch
15-inch	1-inch

- B. At any location where the pipe deflection is determined to exceed the allowable limits by the ENGINEER, the CONTRACTOR shall remove, re-bed, restore the surface (e.g., paving or landscaping) and if required, replace the pipe at no additional cost to the OWNER. No rerounding of the pipe shall be allowed. The CONTRACTOR shall reduce the pipe deflection to 5% or less, as determined by the ENGINEER. The pipeline shall then be re-tested after thirty (30) days of installation for deflection, CCTV inspection, and air tightness.

END OF SECTION

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SECTION 02952

CONCRETE AND ASPHALT PAVEMENT RESTORATION AND REHABILITATION

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:

1. Resurfacing roads and paved surfaces in which surface is removed or damaged by installation of new work.

B. Related sections:

1. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
2. It is the CONTRACTOR'S responsibility for scheduling and coordinating the work of SUBCONTRACTORS, SUPPLIERS, and other individuals or entities performing or furnishing any of the CONTRACTOR'S Work.
3. The following sections are related to the work described in this Section. This list of related sections is provided for convenience only and is not intended to excuse or otherwise diminish the duty of the CONTRACTOR to see that the completed work complies accurately with the Contract Documents.
 - a. Section 02742 - Asphaltic Concrete Paving.
 - b. Section 03300 - Cast-in-Place Concrete.

1.02 SYSTEM DESCRIPTION

A. Performance requirements:

1. Limiting dimensions:
 - a. Determine the exact lengths and dimensions of such roads, pavements, parking areas, and walks that will require removal and replacement for new work.
 - b. Join existing surfaces to terminals of new surfacing in smooth juncture.

1.03 SUBMITTALS

A. Mix designs:

1. Prior to placement of asphalt concrete submit full details, including design and calculations for the asphalt concrete mix proposed.
2. Submit gradation of aggregate base.
3. Submit proposed mix design of portland cement concrete.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Aggregate base course and asphalt pavement: As specified in Section 02460 Asphalt Concrete Pavement and Base
- B. Portland cement concrete replacement material: Class A concrete as specified in Table A:

TABLE A CONCRETE REQUIREMENTS BY CLASS				
Class	Specified Compressive Strength f'c at 28 Days (Pounds per Square Inch)	Maximum Water-to-Cementitious Materials Ratio	Minimum Cementitious Materials per Cubic Yard of Concrete by Weight (Pounds)	Slump Range (Inches)
A	4,000	0.45	564	2 to 4
B (Type III cement)	4,000	0.45	564	2 to 4
C	2,500	0.62	423	3 to 6
CE	2,500	0.62	564	3 to 6

- C. Reinforcement Materials
 - 1. Deformed bars: In accordance with ASTM A 615 Grade 60.
 - 2. Welded wire fabric: Sheets of plain wire in accordance with ASTM A 185.
 - 3. Bar supports:
 - a. Over ground or "mud mat":
 - 1) Precast concrete blocks with cast-in annealed steel tie wires, 16 gauge or heavier.
 - a) Compressive strength of blocks equal to or exceeding the compressive strength of the surrounding concrete.
 - 2) Height as required for minimum 3 inches of clear concrete cover below reinforcement.
 - 3) Minimum block "footprint" of 4 square inches, or as required to supporting load from reinforcement while maintaining the required concrete cover.
 - b. Wire supports: Stainless steel in accordance with CRSI Class 2, Type B.
 - 4. Tie wire: Annealed steel.

2.02 EQUIPMENT

- A. Roads, pavements, parking areas, and walks:
 - 1. Equipment requirements: Good condition, capable of performing work intended in satisfactory manner.

2.03 ACCESSORIES

- A. Material for painting asphalt concrete pavement: Tack coat as specified in Section 02460 Asphalt Concrete Pavement and Base.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Aggregate surface removal replacement:
 - 1. When trench cut is in aggregate surfaced areas, replace aggregate base course material with material matching existing material compacted to 95 percent of its maximum density.
- B. Pavement removal and temporary asphalt replacement:
 - 1. Install temporary asphalt pavement or first course of permanent pavement replacement immediately following backfilling and compaction of trenches that have been cut through existing pavement.
 - 2. Except as otherwise provided, maintain this temporary pavement in safe and reasonably smooth condition until required permanent pavement is installed.
 - 3. Remove and dispose of temporary paving from project site.
 - 4. Where longitudinal trench is partly in pavement, replace pavement to original pavement edge, on a straight line, parallel to centerline of roadway.
 - 5. Where no part of longitudinal trench is in pavement, surfacing replacement shall only be required where existing surfacing materials have been removed.
- C. Asphalt pavement replacement:
 - 1. Replace asphalt pavement to same thickness as adjacent pavement and match as nearly as possible adjacent pavement in texture, unless otherwise indicated on the Drawings.
 - 2. Cut existing asphalt pavements to be removed for trenches or other underground construction by wheel cutter, clay spade, or other device capable of making neat, reasonably straight and smooth cut without damaging adjacent pavement. Cutting device operation shall be subject to acceptance of ENGINEER.
 - 3. Cut and trim existing pavement after placement of required aggregate base course and just prior to placement of asphalt concrete for pavement replacement, and paint trimmed edges with material for painting asphalt concrete pavement immediately prior to constructing new abutting asphalt pavements. No extra payment will be made for these items, and all costs incurred in performing this work shall be incidental to pipe laying or pavement replacement.
 - 4. Conform replacement of asphalt pavement to contour of original pavement.
- D. Portland cement concrete pavement replacement:
 - 1. Where trenches lie within portland cement concrete section of streets, alleys, sidewalks, and similar concrete construction, saw cut such concrete (to a depth of not less than 1-1/2-inches) to neat, vertical, true lines in such manner adjoining surfaces are not damaged.
 - 2. Place portland cement concrete replacement material to dimension as indicated on the Drawings.

3. Provide expansion joints that match existing.
 4. Before placing replacement concrete, thoroughly clean edges of existing pavement and wash with neat cement and water.
 5. Surface finish: Wood float finish.
- E. Curb, gutter, and sidewalk replacement:
1. Where any concrete curb, gutter, or sidewalk has been removed or displaced, replace to nearest construction joints with new Class A curb, gutter, or sidewalk to same dimensions and finish as original construction that was removed:
 - a. Provide expansion joints of same spacing and thickness as original construction.
- F. Placing Concrete Reinforcement
1. Preparation:
 - a. Cut and bend deformed steel reinforcement in the shop, and deliver completed bars to the site for installation.
 - 1) Do not field-bend deformed reinforcement.
 - b. Surface preparation:
 - 1) Thoroughly clean reinforcing bars from rust scale, loose mill scale, rust coat, dirt, oil, and other coatings that adversely affect bonding capacity when placed in the work.
 - a) Thin coating of red rust resulting from short exposures will not be considered objectionable.
 - 2) Remove concrete or other deleterious coatings from dowels and other reinforcement projecting from previous placements by wire brushing or sandblasting before the reinforcement is embedded in the subsequent placement.
 2. Placing reinforcement:
 - a. Locate reinforcement to provide minimum clear concrete cover specified.
 - 1) Where cover is not specified, in accordance with ACI 318.
 - b. Accurately place reinforcement in accordance with the tolerances of ACI 117.
 - 1) Where reinforcement must be moved beyond the specified placing tolerances to avoid interference with other reinforcement, conduits, or embeds, submit the proposed arrangement for ENGINEER'S review.
 - c. Fasten reinforcement securely in place with wire ties.
 - 1) After tying, bend ends of wire ties inward towards the center of the concrete to match clear concrete cover provided for reinforcement.
 - d. Do not weld reinforcing bars or wires.
 - e. Deformed reinforcing bars:
 - 1) Tie slab bars at every intersection around the perimeter of slabs.
 - 2) Tie wall bar and slab bar intersections, other than those around the perimeter, at every fourth intersection, but not more than 48 inches on center each way.
 - 3) Lap splices:
 - a) Lap reinforcement at splices as indicated on the Drawings or specified.

- b) Unless indicated on the Drawings, install lap splices with bars in contact and fastened together with tie wire.
- c) If lap splice length is not indicated on the Drawings, install in accordance with ACI 318.
- f. Welded wire fabric reinforcement:
 - 1) Bend fabric as indicated on the Drawings or required to fit work.
 - 2) Unroll or otherwise straighten fabric to make perfectly flat sheet before placing in the Work.
 - 3) Extend welded wire fabric across concrete section to provide fabric to within 2 inches of vertical concrete edges.
 - 4) Lap splice welded wire fabric as indicated on the Drawings.
 - a) If no splice details are indicated, lap fabric at least 12 inches, fasten with wire ties spaced not more than 24 inches on center, and lace lap with wire of the same diameter of the fabric.

3.02 FIELD QUALITY CONTROL

A. Tests:

1. Asphalt concrete as specified in Section 02460 Asphalt Concrete Pavement and Base.
2. Field testing of concrete:
 - a. During progress of construction, the OWNER will perform any testing it deems is reasonable and necessary for the work, to determine whether the concrete, as being produced, complies with requirements specified.
 - 1) Cost of this testing will be borne by the OWNER.
 - b. Program for sampling and testing:
 - 1) Sample concrete in accordance with ASTM C 172.
 - 2) Slump: Test for slump in accordance with ASTM C 143.
 - 3) Compressive strength, f'c: Make and cure test specimens in accordance with ASTM C 31: Test for compressive strength in accordance with ASTM C 29.
 - 4) Air entrainment: Test in accordance with ASTM C 173.

B. Inspection:

1. Asphalt concrete:
 - a. Lay 10-foot straightedge parallel to centerline of trench when the trenches run parallel to street, and across pavement replacement when trench crosses street at angle.
 - b. Remove and correct any deviation in cut pavement replacement greater than 1/4-inch in 10-feet.
2. Portland cement concrete replacement pavement:
 - a. Lay 10-foot straightedge either across pavement replacement or longitudinal with centerline of gutter or ditch.
 - b. Remove and correct any deviation in cut pavement replacement greater than 1/4-inch in 10-feet.

END OF SECTION

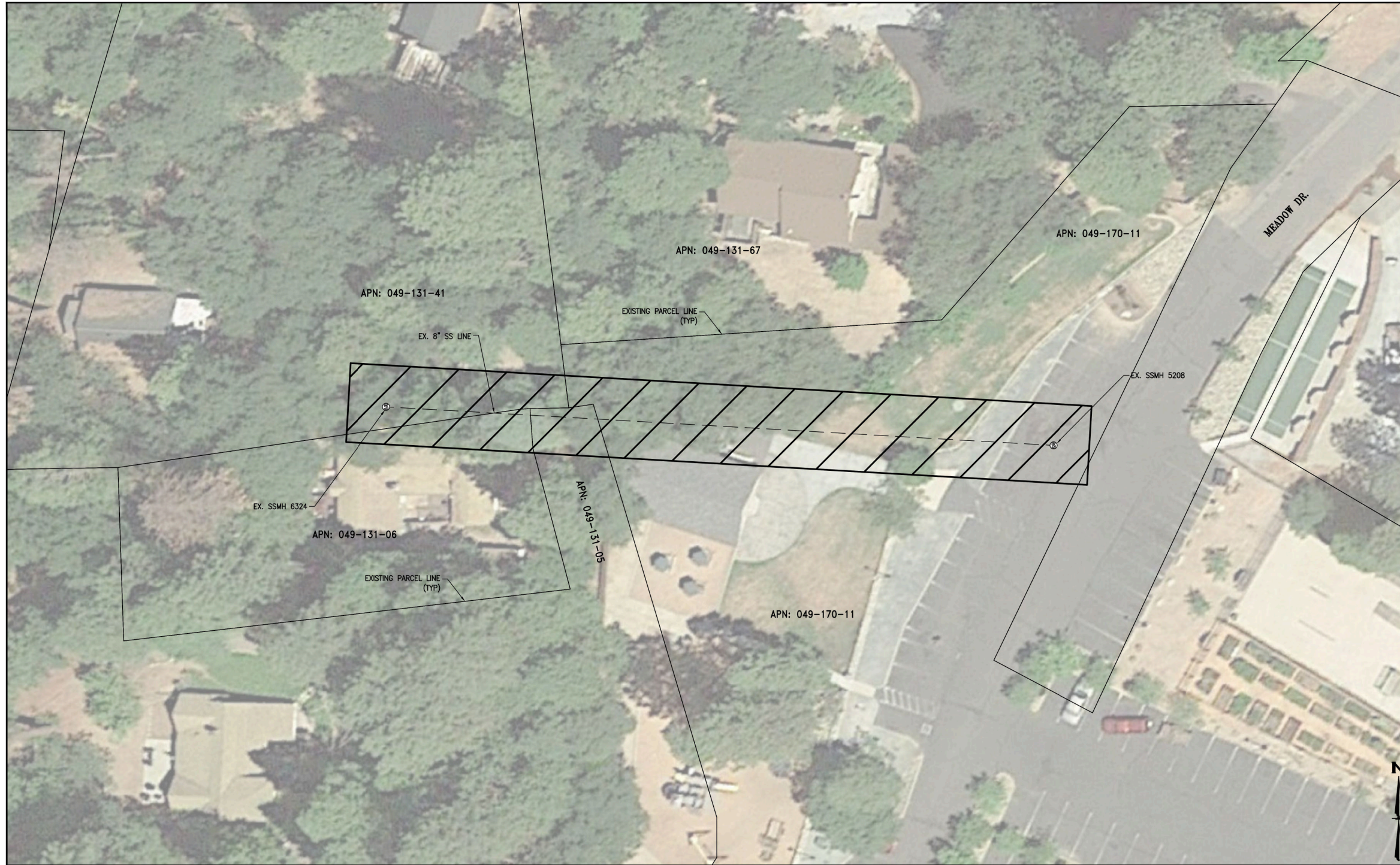
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**PART VIII
PROJECT DRAWINGS**

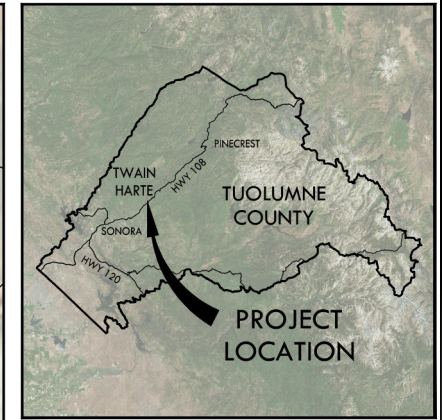


TWAIN HARTE COMMUNITY SERVICES DISTRICT PARK SEWER LINE REPLACEMENT PROJECT

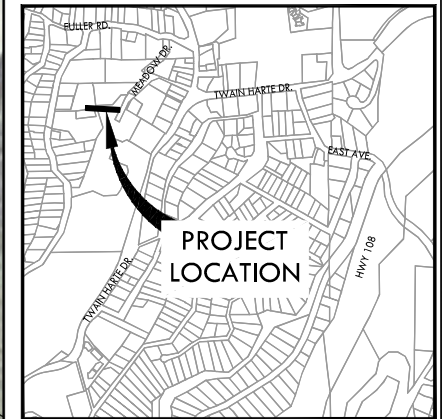
TWAIN HARTE, CALIFORNIA



PROJECT SITE



VICINITY MAP



LOCATION MAP

SHEET INDEX

SHEET	DRAWING	NAME
1	G-01	COVER SHEET
2	G-02	ABBREVIATIONS AND GENERAL NOTES
3	C-01	PLAN AND PROFILE
4	C-02	DETAILS

APPROVALS

APPROVED BY THE TWAIN HARTE COMMUNITY SERVICES DISTRICT

 BY TOM TROTT, GENERAL MANAGER DATE 8/20/2018

BLACKWATER
 CONSULTING ENGINEERS, INC.
 605 STANDIFORD AVE., SUITE N, MODESTO, CA 95350 PH. 209.322.1820

REV	DATE	DESCRIPTION	APP

COVER SHEET

TWAIN HARTE COMMUNITY SERVICES DISTRICT
 PARK SEWER LINE REPLACEMENT PROJECT

DESIGNED BY
KVK

DRAWN BY
KVK

CHECKED BY
JB

JOB NO.
J14074

DATE
JUNE 2018

DRAWING
G-01

SHEET NO.
1 OF 4

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CONTACTS

REGULATORY AGENCY/OWNER:

TWAIN HARTE COMMUNITY SERVICES DISTRICT
22912 VANTAGE POINT DRIVE
P.O. BOX 649
TWAIN HARTE, CA 95383
GENERAL MANAGER: TOM TROTT, P.E.
T:209.586.3172

ENGINEER:

BLACK WATER CONSULTING ENGINEERS, INC.
605 STANDIFORD AVE, STE. N
MODESTO, CA 95350
ENGINEER: JEFF BLACK, P.E.
T:209.322.1817

GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL CONSIDER THE INFORMATION PRESENTED IN THESE NOTES AS PART OF THE CONSTRUCTION DOCUMENTS.
- PRIOR TO ANY WORK BEING PERFORMED, THE CONTRACTOR SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES FOR A PRE-CONSTRUCTION CONFERENCE. CONTRACTOR SHALL ALSO NOTIFY THE OWNERS AND ENGINEER SEVENTY-TWO (72) HOURS PRIOR TO MEETING DATE.
- ENGINEER OF RECORD MUST APPROVE ANY SUBSTITUTIONS. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE DRAWINGS AND OTHER DETAILS; OR EXISTING CONDITIONS NOT SHOWN OR DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF WORK. MATERIALS PROCURED PRIOR TO RESOLUTION OF CONFLICTS SHALL BE AT THE CONTRACTOR'S RISK.
- ALL WORK IS NEW UNLESS INDICATED AS EXISTING.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE GOVERNING BUILDING JURISDICTION AND/OR THE STATE OF CALIFORNIA, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THE PROJECT.
- THE DRAWINGS AND SPECIFICATIONS REPRESENT THE CONTEMPLATED PROJECT, AND DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE CONSTRUCTION AND ALL ADJACENT PROPERTIES DURING CONSTRUCTION.
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING TAKING EXTRA PRECAUTIONS TO ENSURE THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, ENGINEER, STATE, AND THE TUOLUMNE COUNTY HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER. THE WORK AREA IS A PUBLIC PARK THAT WILL REMAIN IN USE DURING CONSTRUCTION AS WELL AS A BACKYARD OF A RESIDENCE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR:
 - CLEANING THE JOB SITE AT THE END OF EACH PHASE OF WORK.
 - REMOVING AND DISPOSING OF ALL TRASH, SCRAP AND UNUSED MATERIAL AT THEIR OWN EXPENSE IN A TIMELY MANNER.
 - MAINTAINING THE SITE IN A NEAT, SAFE AND ORDERLY MANNER AT ALL TIMES.
 - KEEPING MATERIALS, EQUIPMENT AND TRASH OUT OF THE WAY OF PUBLIC PARK FACILITIES SO AS TO NOT DELAY THE JOB.
 - PROVIDING THEIR OWN SAFETY, TRAFFIC CONTROL PERMITS, RETESTING AND REINSPECTION.
 - PROVIDING ALL WATER AND POWER AS REQUIRED FOR THE CONTRACTOR'S USE DURING CONSTRUCTION.
 - SCHEDULING INSPECTION AND TESTING OF ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT. ALL TESTING SHALL CONFORM TO REGULATORY AGENCY'S STANDARD SPECIFICATIONS.
 - FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.
 - THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN, OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY IN ACCORDANCE WITH THE CURRENT ISSUE OF THE "CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" ADOPTED BY THE CALIFORNIA DEPARTMENT OF TRANSPORTATION.
- THE CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE AS-BUILT RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL PIPING AND CONDUITS, STRUCTURES AND OTHER FACILITIES. AS-BUILT RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR.
- PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER, ONE SET OF NEATLY MARKED AS-BUILT RECORD DRAWINGS SHOWING THE INFORMATION REQUIRED ABOVE. AS-BUILT RECORD DRAWINGS SET SHALL BE CURRENT WITH ALL CHANGES AND DEVIATIONS REDLINED AS A PRECONDITION TO THE FINAL PAYMENT APPROVAL AND/OR FINAL ACCEPTANCE.
- WE CALL YOUR ATTENTION TO TITLE 8 CALIFORNIA ADMINISTRATION CODE SECTION 1540 (A) (1) OF THE CONSTRUCTION SAFETY ORDERS ISSUED BY THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD PURSUANT TO THE CALIFORNIA OCCUPATIONS SAFETY AND HEALTH ACT OF 1973 AS AMENDED WHICH STATES: (1) PRIOR TO OPENING AN EXCAVATION EFFORT SHALL BE MADE TO DETERMINE WHETHER UNDERGROUND INSTALLATIONS; I.E. SEWER, WATER, FUEL, ELECTRICAL LINES, ETC., WILL BE ENCOUNTERED AND IF SO, WHERE SUCH UNDERGROUND INSTALLATIONS ARE LOCATED. WHEN THE EXCAVATION APPROACHES THE APPROXIMATE LOCATION OF SUCH INSTALLATION, THE EXACT LOCATION SHALL BE DETERMINED BY CAREFUL PROBING OR HAND DIGGING; AND, WHEN IT IS UNCOVERED, ADEQUATE PROTECTION SHALL BE PROVIDED FOR THE EXISTING INSTALLATION. ALL KNOWN OWNERS OF UNDERGROUND FACILITIES IN THE AREA CONCERNED SHALL BE ADVISED OF PROPOSED WORK AT LEAST 48 HOURS PRIOR TO THE START OF ACTUAL EXCAVATION.
- ALL DIMENSIONS SHOWN ON DRAWINGS SHALL BE VERIFIED WITH EXISTING CONDITIONS. DO NOT SCALE DRAWINGS. ENGINEER OF RECORD MUST APPROVE ANY SUBSTITUTIONS. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE DRAWINGS AND OTHER DETAILS; OR EXISTING CONDITIONS NOT SHOWN OR DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS PRIOR TO COMMENCEMENT OF WORK. MATERIALS PROCURED PRIOR TO RESOLUTION OF CONFLICTS SHALL BE AT THE CONTRACTOR'S RISK.
- THESE PLANS HAVE BEEN CHECKED BY TWAIN HARTE COMMUNITY SERVICES DISTRICT

AND/OR AUTHORIZED REPRESENTATIVE, BUT SUCH CHECKING OR APPROVAL DOES NOT RELIEVE THE CONTRACTOR FROM HIS/HER RESPONSIBILITY TO CORRECT ERRORS, OMISSIONS OR MAKE CHANGES REQUIRED BY CONDITIONS DISCOVERED IN THE FIELD DURING THE COURSE OF CONSTRUCTION.

- THE CONTRACTOR SHALL CONTROL DUST AT ALL TIMES. DUST CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IMPLEMENTED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL GUIDELINES (INCLUDING, BUT NOT LIMITED TO THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT).
- ALL LINES ABANDONED DURING CONSTRUCTION SHALL BE REMOVED.
- ALL INDEPENDENT LABORATORY INSPECTION REQUESTED BY THE ENGINEER SHALL BE PAID FOR BY THE DISTRICT WITH RE-TESTING BEING PAID FOR BY THE CONTRACTOR. ROADWAY SUBGRADE, SUB-BASE, BASE, AND TRENCH BACKFILL COMPACTION TESTING SHALL BE PERFORMED BY A SOILS LAB CONTRACTING WITH TWAIN HARTE COMMUNITY SERVICES DISTRICT. R-VALUE TESTING OF THE PAVEMENT SUB-GRADE SHALL BE PERFORMED PRIOR TO THE INSTALLMENT OF BASE ROCK, OR AS REQUIRED BY THE OWNER. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED TO SCHEDULE ALL INSPECTION / TESTING SERVICES.
- ALL TRENCHES SHALL BE BACK FILLED IN ACCORDANCE WITH TWAIN HARTE COMMUNITY SERVICES DISTRICT SPECIFICATIONS AND IMPROVEMENTS STANDARDS.
- PRIOR TO INITIATING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THAT ALL NECESSARY FEDERAL, STATE AND LOCAL PERMITS AND/OR AUTHORIZATIONS HAVE BEEN OBTAINED.
- THE CONTRACTOR MAY USE THE DISTRICT'S WELL SITE ACROSS THE STREET (MEADOW DRIVE) AS A STAGING AREA.

STANDARDS FOR THE WORK

- PIPE FITTINGS, WIRING, AND SUPPORTS SHALL BE PROVIDED TO PRODUCE COMPLETE, OPERABLE SYSTEMS WITH ALL ELEMENTS PROPERLY INTERCONNECTED AS SHOWN TO MEET THE PERFORMANCE INTENT AS INTERPRETED BY THE OWNER. IF A SPECIFIED DIMENSION LOCATION IS NOT SHOWN FOR INTERCONNECTIONS OR SMALLER SYSTEM ELEMENTS, THE CONTRACTOR SHALL SELECT APPROPRIATE LOCATIONS AND SHOW THEM ON THE SHOP DRAWING SUBMITTALS FOR REVIEW.
- EQUIPMENT AND MATERIALS SHALL BE NEW AND WITHOUT IMPERFECTIONS AND SHALL BE CONSTRUCTED IN A NEAT AND WORKMANLIKE MANNER; ALIGNED, LEVELED, CLEANED AND DUSTED FOR SATISFACTORY OPERATION. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARD PRACTICES FOR THIS TYPE OF WORK.
- ALL MATERIAL AND WORK SHALL CONFORM TO TWAIN HARTE COMMUNITY SERVICES DISTRICT DESIGN AND CONSTRUCTION STANDARDS AND TUOLUMNE COUNTY SPECIFICATIONS AND IMPROVEMENT STANDARDS. ALL IMPROVEMENTS ARE SUBJECT TO THE INSPECTION AND APPROVAL OF TWAIN HARTE COMMUNITY SERVICES DISTRICT.
- ASBESTOS CEMENT PIPE (ACP) OR VITRIFIED CLAY PIPE (VCP) FITTINGS SHALL NOT BE USED.
- MANHOLES, VALVES, CLEAN OUTS, ETC. SHALL BE BROUGHT TO FINISH GRADE BY THE CONTRACTOR AFTER THE FINAL PAVING COURSE IS PLACED.

EXISTING CONDITIONS NOTES

- FIELD VERIFY ALL CONDITIONS. WHERE EXISTING CONDITIONS VARY SIGNIFICANTLY FROM THOSE SHOWN ON THESE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO CONTINUED CONSTRUCTION RELATED TO SUBJECT CONDITIONS.
- ALL EXISTING CONNECTIONS AND ELEMENTS TO BE REPLACED SHALL BE REPLACED OR RE-ATTACHED TO MATCH EXISTING CONDITIONS. INSPECTION IS REQUIRED FOR ALL WORK UNLESS APPROVED BY RESPONSIBLE ENGINEER OF RECORD.
- EXISTING STREETS THAT REQUIRE RECONSTRUCTION AS A RESULT OF THE CONSTRUCTION TRAFFIC SHALL REMAIN OPEN AT ALL TIMES WITH ADEQUATE DETOURS DURING RECONSTRUCTION. RECONSTRUCTION OF EXISTING STREETS SHALL INCLUDE UPGRADING OF THE AFFECTED PAVEMENT AREA TO MEET ORIGINAL STANDARDS TO PROVIDE A SOUND STRUCTURAL SECTION. THE TWAIN HARTE COMMUNITY SERVICES DISTRICT ENGINEER SHALL APPROVE ALL IMPROVEMENTS.
- WHENEVER EXISTING FACILITIES (INCLUDING BUT NOT LIMITED TO LANDSCAPING, CONCRETE, AND LANDSCAPING FEATURES) ARE REMOVED, DAMAGED, BROKEN OR CUT IN THE INSTALLATION OF THE WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, AFTER PROPER BACKFILLING AND/OR CONSTRUCTION, WITH MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, ENGINEER AND THE RESPECTIVE REGULATORY AUTHORITY.
- THE CONTRACTOR SHALL EXERCISE DUE CAUTION AND SHALL CAREFULLY PRESERVE BENCHMARKS, REFERENCE POINTS AND ALL SURVEY STAKES, AND SHALL BEAR ALL EXPENSE FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE. ALL STREET MONUMENTS, LOT CORNERS, BENCHMARKS, AND OTHER PERMANENT PIPE MONUMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION SHALL BE REPLACED BY A LICENSED CIVIL ENGINEER OR SURVEYOR PRIOR TO ACCEPTANCE OF THE IMPROVEMENTS BY TWAIN HARTE COMMUNITY SERVICES DISTRICT.
- THE INFORMATION SHOWN ON THE PLANS WITH REGARD TO THE EXISTING UTILITIES AND/OR IMPROVEMENTS WAS DERIVED FROM FIELD INVESTIGATIONS AND/OR RECORD INFORMATION. THE ENGINEER DOES NOT GUARANTEE THESE LOCATIONS TO BE EITHER TRUE OR EXACT. PRIOR TO CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE UNDERGROUND UTILITIES RELATED TO THE PROJECT, INCLUDING BUT NOT LIMITED TO SEWER, STORM DRAIN, WATER, IRRIGATION, GAS, ELECTRICAL, ETC. AND SHALL NOTIFY THE ENGINEER AND OWNER IN WRITING FOURTY-EIGHT (48) HOURS IN ADVANCE OF EXPOSING THE UTILITIES SO THAT THE EXACT LOCATION AND ELEVATION CAN BE VERIFIED AND DOCUMENTED. IF LOCATION AND/OR ELEVATION DIFFERS FROM THAT SHOWN ON THE DESIGN PLANS, PROVISIONS TO ACCOMMODATE NEW LOCATION/ELEVATION MUST BE MADE PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT ALL UTILITIES. THE CONTRACTOR SHALL DO NO EXCAVATION UNTIL ALL UTILITY AGENCIES AND THE TUOLUMNE COUNTY DEPARTMENT OF PUBLIC WORKS HAVE BEEN NOTIFIED AND HAVE BEEN GIVEN THE OPPORTUNITY TO MARK THEIR FACILITIES IN THE FIELD. THE CONTRACTOR SHALL CALL U.S.A. AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO DOING ANY EXCAVATING.
- EXISTING CURB AND SIDEWALK WITHIN THE PROJECT LIMITS THAT ARE DAMAGED OR DISPLACED, EVEN THOUGH THEY WERE NOT TO BE REMOVED, SHALL BE REPLACED PER TUOLUMNE COUNTY STANDARDS EVEN IF DAMAGE OR DISPLACEMENT OCCURRED PRIOR TO ANY WORK PERFORMED BY THE CONTRACTOR. THE CONTRACTOR SHALL ALSO PROTECT AND RESTORE (IF DAMAGED) PRIVATE DRIVEWAYS, BUILDINGS, LANDSCAPING,

FENCING, WALLS, SURFACE HARDSCAPES, AND OTHER PRIVATE FACILITIES SURROUNDING THE WORK AREA. NO TREES SHALL BE REMOVED UNLESS THEY ARE SHOWN AND NOTED TO BE REMOVED ON THE IMPROVEMENT PLANS. ALL TREES CONFLICTING WITH GRADING, UTILITIES, OR OTHER IMPROVEMENTS, OR OVERHANGING THE SIDEWALK OR PAVEMENT TO FORM A NUISANCE OR HAZARD, SHALL BE TRIMMED OR PROPERLY TREATED AND SEALED. THE DRIP LINE OF TREES TO BE SAVED WILL BE FENCED, AND NO GRADING SHALL TAKE PLACE WITHIN THE FENCED AREA.

- EXISTING UTILITIES SHALL NOT BE INTERRUPTED UNTIL THE UTILITY COMPANY HAS PROVIDED ALTERNATIVE SERVICE FACILITIES. THE CONTRACTOR SHALL COOPERATE AND COORDINATE WORK WITH THE APPROPRIATE AGENCIES AND UTILITY COMPANIES.
- PRIOR TO TRENCHING FOR ANY SEWER, WATER, OR STORM DRAIN PIPE, THE CONTRACTOR SHALL VERIFY IN THE FIELD, THE SIZE AND LOCATION OF THE EXISTING PIPE AT THE POINT OF CONNECTION. ANY DEVIATION FROM THE PLANS SHALL BE RESOLVED BY THE DESIGN ENGINEER PRIOR TO TRENCHING. ANY DAMAGE CAUSED BY TRENCHING TO EXISTING UNDERGROUND UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL COORDINATE LOCATIONS OF NEW UTILITY LINES WITH EXISTING PRIOR TO CONSTRUCTION.
- THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES. THE LOCATION AND SIZE OF ANY EXISTING UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS IS APPROXIMATE. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY EXISTING UTILITY LOCATIONS CONFLICT WITH NEW WORK.

RESTORATION OF EXISTING CONDITIONS

- FENCES THAT NEED TO BE REMOVED DURING CONSTRUCTION SHALL BE REMOVED TO THE NEAREST POST BEYOND THE AREA OF CONSTRUCTION. CONTRACTOR SHALL MATCH REPLACEMENT FENCE WITH THE EXISTING FENCE.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY FENCING WHERE EXISTING FENCE IS REMOVED TO PREVENT UNWANTED CROSSING OF THE PREVIOUS FENCE LINE. THE WORK AREA (INCLUDING BUT NOT LIMITED TO ALL UNSUPERVISED EQUIPMENT OR OPEN TRENCHES) SHALL ALSO BE LIMITED OFF WITH TEMPORARY FENCING TO KEEP THE PUBLIC SAFE DURING OPERATIONS.

DEWATERING

- DEWATERING PLANS FOR ALL TRENCHES SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER AS THERE ARE KNOWN HIGH GROUNDWATER LEVELS IN THE CONSTRUCTION AREA.

SHORING AND BRACING

- THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKMEN FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 5' OR MORE. SAID PROTECTION IS REQUIRED AND MUST BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT AND THE STATE REGULATIONS.

ABBREVIATIONS

AB	AGGREGATE BASE	NTS	NOT TO SCALE
ALT	ALTERNATE	OC	ON CENTER
AVE	AVENUE	OHE	OVERHEAD ELECTRIC
BFP	BACK FLOW PREVENTER	P.C.	POINT OF CURVATURE
BTWN	BETWEEN	PG&E	PACIFIC GAS AND ELECTRIC
BY	BUTTERFLY VALVE	PL	PROPERTY LINE
CIP	CAST IN PLACE	PT	POINT
CMP	CORRUGATED METAL PIPE	P.T.	POINT OF TANGENT
CONC OR CC	CONCRETE	R	RADIUS
DIA	DIAMETER	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	R.D.	RELETIVE DENSITY
EX	EXISTING	RD	ROAD
FDN	FOUNDATION	REIN	REINFORCED
FF	FINISH FLOOR	REQ'D	REQUIRED
FG	FINISH GRADE	RT	RIGHT
FH	FIRE HYDRANT	S	SLOPE / SOUTH
GR	GRATE	SHT	SHEET
GV	GATE VALVE	SM	SIMLAR
HORIZ	HORIZONTAL	SS	SANITARY SEWER
HT	HEIGHT	SST	STAINLESS STEEL
ID	INSIDE DIAMETER	ST	STREET
INV	INVERT	STD	STANDARD
IRR	IRRIGATION	STL	STEEL
LF	LINEAL FEET OR LINEAR FEET	TEMP	TEMPORARY
LT	LEFT	TG	TOP OF GRATE
MAX	MAXIMUM	THRU	THROUGH
MFR	MANUFACTURER	TYP	TYPICAL
MGD	MILLION GALLONS PER DAY	UON	UNLESS OTHERWISE NOTED
MIN	MINIMUM	VERT	VERTICAL
N	NORTH / NEW	W	WATER / WEST
NIC	NOT INCLUDED	WM	WATER METER



BLACK WATER
CONSULTING ENGINEERS, INC.
605 STANDIFORD AVE., SUITE N, MODESTO, CA 95350 PH. 209.322.1820

REV	DATE	DESCRIPTION	APP

ABBREVIATIONS AND GENERAL NOTES

TWAIN HARTE COMMUNITY SERVICES DISTRICT
PARK SEWER LINE REPLACEMENT PROJECT

DESIGNED BY

KVK

DRAWN BY

KVK

CHECKED BY

JB

JOB NO.

J14074

DATE

JUNE 2018

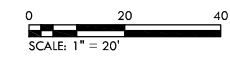
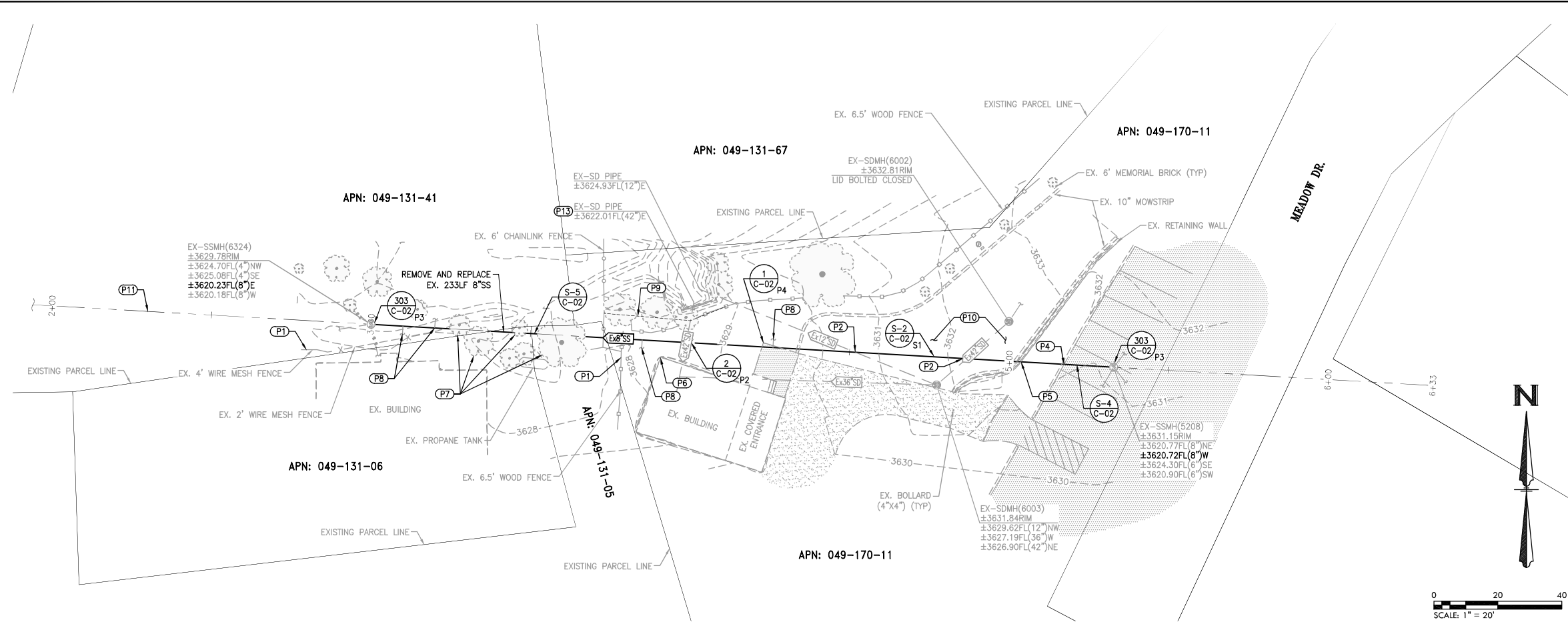
DRAWING

G-02

SHEET NO.

2 OF 4

J:\114074 THCD ON-CALL TASKS_LPT\178 PARK SEWER LINE REPLACEMENT_CAD\TASK 2 ENGINEERING DESIGN\PLANSET\WP1.DWG PLOT: 6/15/2018 3:00:57 PM BY KEVIN WILLIAMS

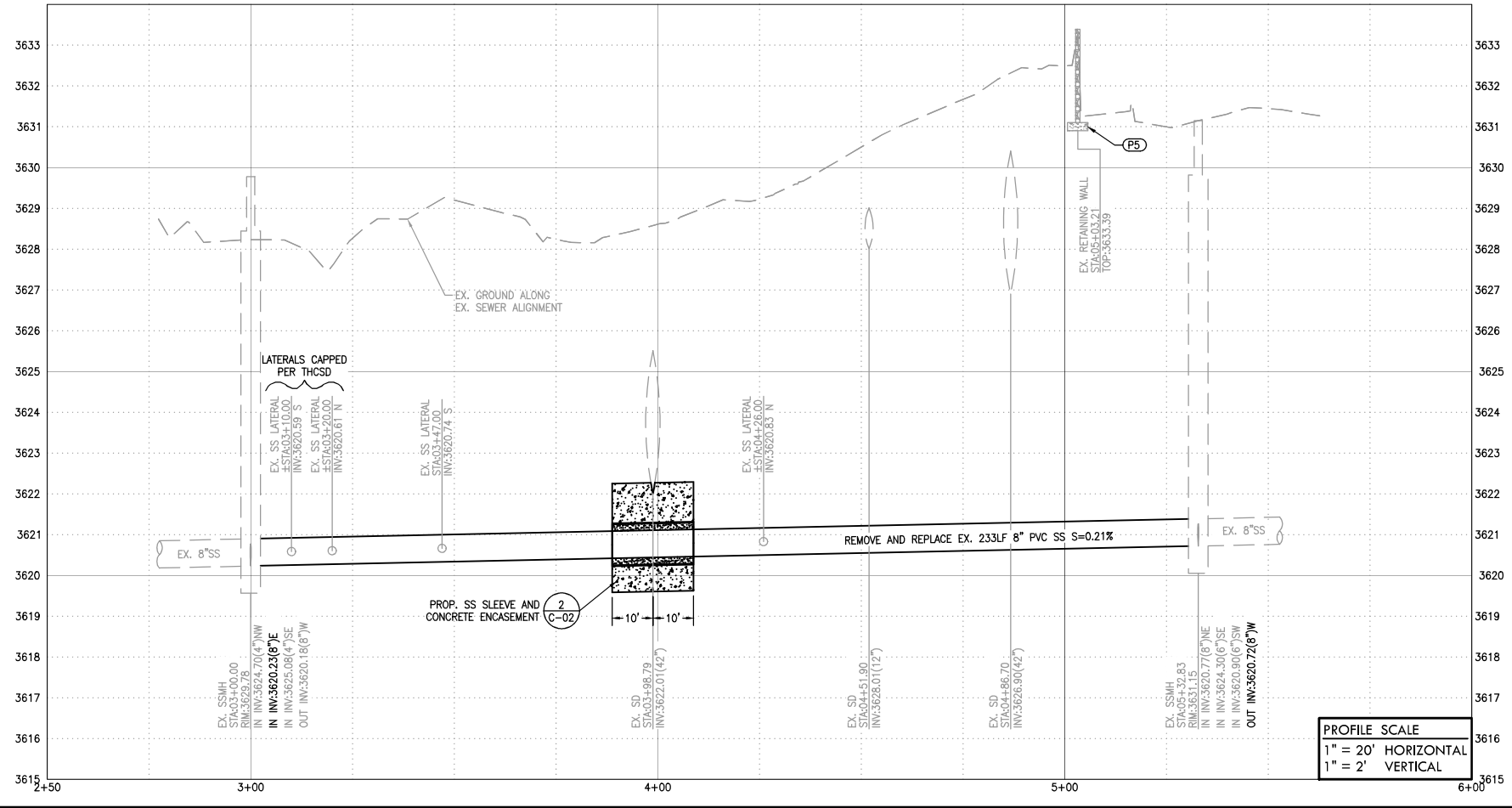


- PROTECTION NOTES**
- (P1) REMOVE AND REPLACE EXISTING FENCING IF REQUIRED FOR CONSTRUCTION.
 - (P2) CONTRACTOR TO USE EXTREME CAUTION WHEN EXCAVATING AROUND EXISTING STORM DRAIN PIPE. PROTECT EXISTING STORM DRAIN CULVERTS.
 - (P3) CONTRACTOR TO PROTECT EXISTING SANITARY SEWER MANHOLES.
 - (P4) CONTRACTOR TO MAKE A CLEAN SAWCUT AS NEEDED FOR REMOVING A PORTION OF THE EXISTING CONCRETE PAD, AND RESTORE IT AFTER CONSTRUCTION. CONTRACTOR TO PROTECT THE REMAINDER OF THE EXISTING CONCRETE PAD AND CONCRETE CURB.
 - (P5) CONTRACTOR TO PROTECT EXISTING ROCK RETAINING WALL AND REPAIR IF DAMAGED DURING CONSTRUCTION. THE DEPTH OF THE RETAINING WALL FOOTING IS UNKNOWN.
 - (P6) CONTRACTOR TO PROTECT EXISTING BUILDING DURING CONSTRUCTION.
 - (P7) CONTRACTOR TO PROTECT OR TRIM EXISTING TREES WITHIN TRENCH ZONE WHERE POSSIBLE. CONTRACTOR TO OBTAIN THE APPROVAL OF THE CONSTRUCTION MANAGER PRIOR TO EXCAVATION OR REMOVAL OF ANY TREES DURING CONSTRUCTION.
 - (P8) CONTRACTOR TO RECONNECT EXISTING SEWER LATERALS.
 - (P9) CONTRACTOR TO PLACE A CONSTRUCTION FENCE IN THIS LOCATION TO PROTECT THE CREEK AND RIPARIAN AREA NORTH OF THE EXISTING HEADWALL. THIS AREA IS TO NOT BE DISTURBED.
 - (P10) CONTRACTOR TO REPAIR EXISTING IRRIGATION LINES IN THE GRASS AREA OF PARK. THE LOCATIONS ARE CURRENTLY UNKNOWN.
 - (P11) ALIGNMENT OF SS DOWNSTREAM OF SSMH 6324 (STA 3+00) WAS NOT SURVEYED FOR THIS PROJECT AND ITS LOCATION IS SHOWN CONCEPTUALLY. THERE EXISTS A MH AT ±STA 0+00 THAT IS AVAILABLE FOR BY-PASS PUMPING OR DEWATERING, IF NECESSARY.
 - (P12) THCD INSPECTIONS INDICATE THE EXISTING SEWER PIPE "SAGS" BETWEEN ±4+00 AND ±5+00, AND MAY NEED TO BE PUMPED OUT WHEN REMOVED.
 - (P13) WITHOUT DISTURBING THE EXISTING CREEK CHANNEL, CONTRACTOR SHALL TEMPORARILY "SLIP" THE EXISTING 42" SD USING TEMPORARY PIPE AND SAND BAGS. ALL WORK SHALL BE SET INSIDE THE EXISTING PIPE AND INSTALLED UNDER THE INSPECTION OF A THCD REPRESENTATIVE. TEMPORARY WORKINGS SHALL BE REMOVED BY THE CONTRACTOR BEFORE PROJECT COMPLETION. THE MATERIAL AND SIZE AND SCHEDULE OF TEMPORARY PIPING SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO INSTALLATION.
- GENERAL NOTES**
1. THE CONTRACTOR'S PRIMARY ACCESS TO THE PROJECT SITE SHALL BE FROM MEADOW DRIVE. ACCESS FROM THE WEST SHALL BE LIMITED AND ONLY AS APPROVED BY THE CONSTRUCTION MANAGER.
- SEWER NOTES**
- (S1) CONTRACTOR TO REMOVE EXISTING SANITARY SEWER LINE AND INSTALL NEW SEWER LINE PER PLANS.
 - (S2) THE MINIMUM SLOPE ON TUOLUMNE UTILITIES DISTRICT STD DWG 303 DOES NOT APPLY FOR THIS PROJECT.
 - (S3) CONTRACTOR RESPONSIBLE FOR BYPASSING THE ENTIRE SEWER FLOW LINE DURING CONSTRUCTION.
 - (S4) CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING EXCAVATED AREAS IF NECESSARY.



BLACKWATER CONSULTING ENGINEERS, INC.
 605 STANDIFORD AVE., SUITE N, MODESTO, CA 95350 PH. 209.322.1820

REV	DATE	DESCRIPTION	APP

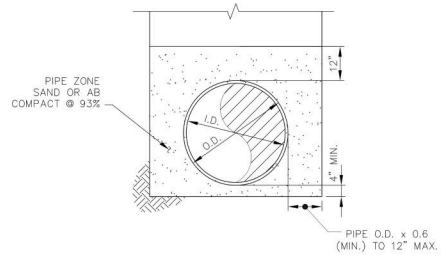


PROFILE SCALE
 1" = 20' HORIZONTAL
 1" = 2' VERTICAL

PLAN AND PROFILE

**TWAIN HARTE COMMUNITY SERVICES DISTRICT
 PARK SEWER LINE REPLACEMENT PROJECT**

DESIGNED BY	KVK
DRAWN BY	KVK
CHECKED BY	JB
JOB NO.	J14074
DATE	JUNE 2018
DRAWING	C-01
SHEET NO.	3 OF 4



- NOTES:
- SEE STANDARD SPECIFICATIONS FOR BEDDING MATERIAL REQUIREMENTS.
 - A VERTICAL TRENCH MAY NOT BE ABLE TO BE MAINTAINED. CONTRACTOR SHALL USE APPROPRIATE TRENCH SHORING AND OTHER EQUIPMENT TO MINIMIZE TRENCH WIDTH.



STANDARD DETAILS NOT FOR CONSTRUCTION

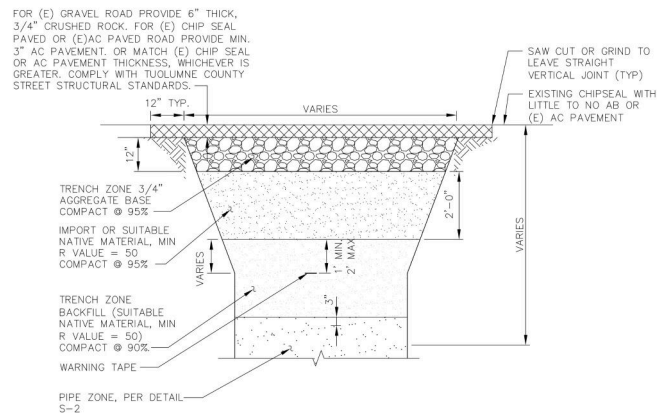
Twain Harte Community Services District

PIPE BEDDING

22933 TWAIN HARTE DRIVE
P.O. BOX 649
TWAIN HARTE, CA 95383

SCALE: NONE APPROVED BY: SN
DATE: NOVEMBER 2006 DRAWN BY: RN

S-2



- NOTE:
- SEE STANDARD SPECIFICATIONS FOR BACKFILL MATERIAL REQUIREMENTS.
 - A VERTICAL TRENCH MAY NOT BE ABLE TO BE MAINTAINED. CONTRACTOR SHALL USE APPROPRIATE TRENCH SHORING AND OTHER EQUIPMENT TO MINIMIZE TRENCH WIDTH.
 - WORK IN COUNTY ROADS SHALL COMPLY WITH TUOLUMNE COUNTY STANDARDS, WHICH MAY REQUIRE SLURRY CEMENT BACKFILL.



STANDARD DETAILS NOT FOR CONSTRUCTION

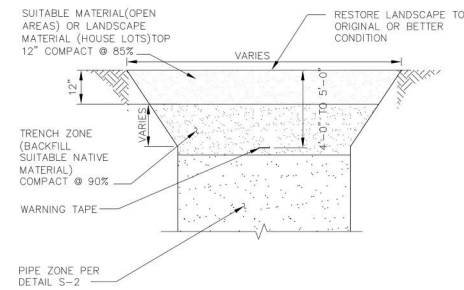
Twain Harte Community Services District

TRENCH ZONE ASPHALT PAVED SURFACE

22933 TWAIN HARTE DRIVE
P.O. BOX 649
TWAIN HARTE, CA 95383

SCALE: NONE APPROVED BY: SN
DATE: NOVEMBER 2006 DRAWN BY: RN

S-4



- NOTE:
- SEE STANDARD SPECIFICATION FOR BACKFILL MATERIAL REQUIREMENTS.
 - A VERTICAL TRENCH MAY NOT BE ABLE TO BE MAINTAINED. CONTRACTOR SHALL USE APPROPRIATE TRENCH SHORING AND OTHER EQUIPMENT TO MINIMIZE TRENCH WIDTH.



STANDARD DETAILS NOT FOR CONSTRUCTION

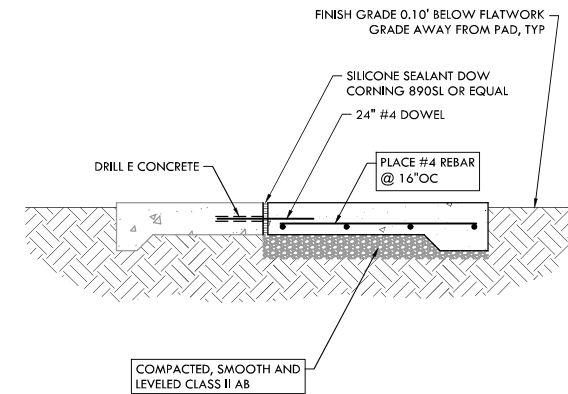
Twain Harte Community Services District

TRENCH ZONE OPEN AREAS

22933 TWAIN HARTE DRIVE
P.O. BOX 649
TWAIN HARTE, CA 95383

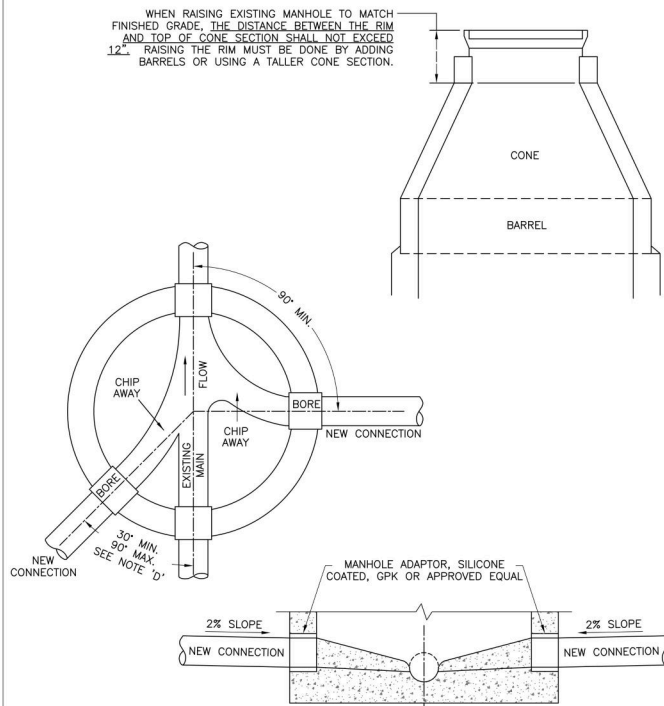
SCALE: NONE APPROVED BY: SN
DATE: NOVEMBER 2006 DRAWN BY: RN

S-5



- NOTE:
- MATCH EXISTING CONCRETE HEIGHT AND THICKNESS.
 - RECOMPACT 6" SUBGRADE TO 90% R.D.
 - AT JOINT USE 1/2"x24" DOWELS AT 16" OC AND 6" FROM EDGE OF PAD. DOWELS TO BE SET LEVEL. ALIGN DOWELS WITH CONCRETE REINFORCEMENT.

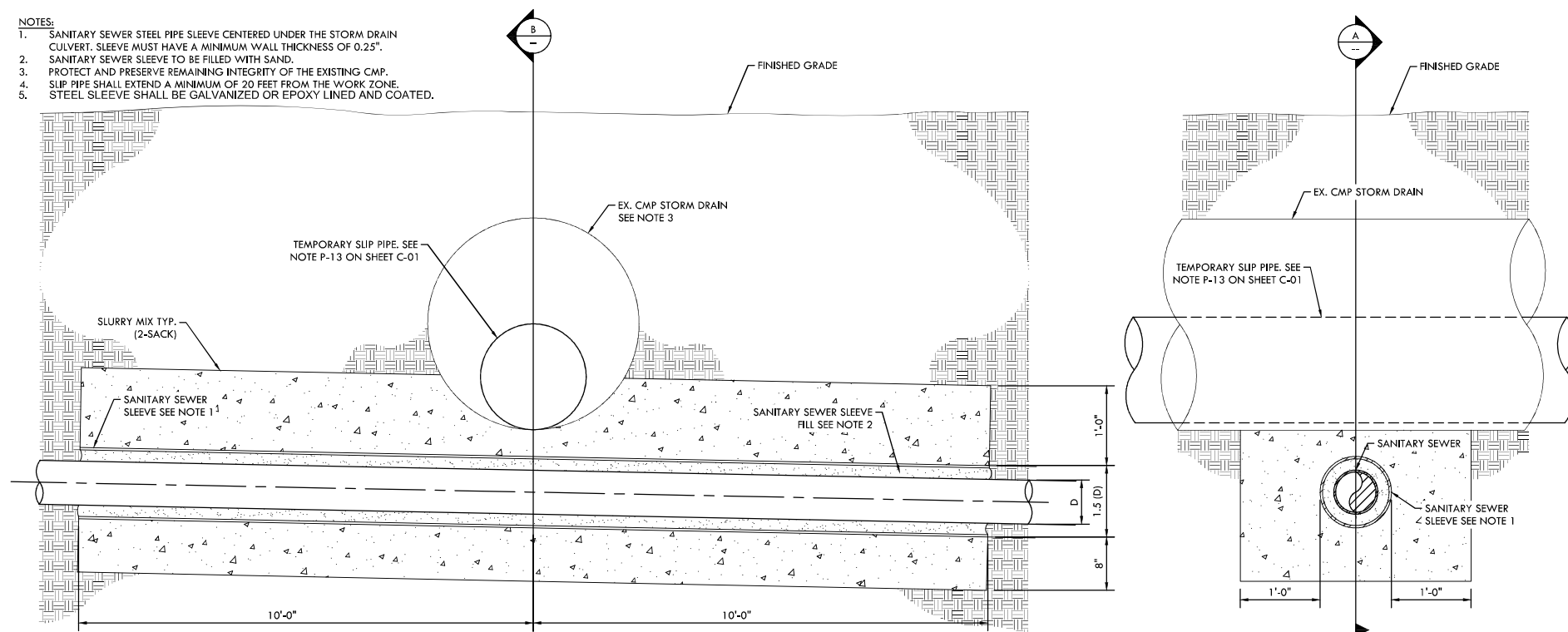
CONCRETE FLATWORK AT EXISTING FLATWORK



- NOTES:
- NEW CONNECTIONS TO BE BORED 2" LARGER THAN THE PIPE DIAMETER.
 - NEW CONNECTIONS WILL HAVE A MINIMUM SLOPE OF 2%.
 - FLOW CHANNEL FROM THE NEW CONNECTION TO THE EXISTING MAIN SHALL BE CHIPPED AWAY AND MORTARED TO A SMOOTH FINISH.
 - IF TIGHTER ENTRANCE ANGLES ARE REQUIRED DUE TO SITE CONSTRAINTS, USE LONG RADIUS BEND OUTSIDE OF MANHOLE.
 - CONTRACTOR IS RESPONSIBLE FOR DEBRIS REMOVAL AND PREVENTION OF FLOW BLOCKAGE WHILE UNDER CONSTRUCTION.
 - CONTRACTOR SHALL COMPLY WITH ALL CONFINED-SPACE REQUIREMENTS PER CAL-OSHA.

TUOLUMNE UTILITIES DISTRICT
SEWER CONNECTION TO EXISTING MANHOLE

REV. 08-14-12
STD. DWS. NO.
303



CONCRETE ENCASMENT TYPICAL SECTION DETAILS



BLACK WATER CONSULTING ENGINEERS, INC.
605 STANDFORD AVE., SUITE N, MODESTO, CA 95350 PH. 209.322.1820

REV	DATE	DESCRIPTION

DESIGNED BY: KVK
DRAWN BY: KVK
CHECKED BY: JB
JOB NO.: J14074
DATE: JUNE 2018
DRAWING: C-02
SHEET NO.: 4 OF 4

J:\114074\TSD\ON-CALL TASKS\178 PARK SEWER LINE REPLACEMENT_CAD\TASK 2 ENGINEERING DESIGN\PLANSET\WP\DWG\DETAILS\NOT 6/15/2018 11:00:13 AM BY KEVIN WILLIAMS