

**PROJECT MANUAL FOR
City of Carlsbad East Rose Street
Sewer Improvements**

City of Carlsbad

Bid No. 2021-10

October 2021

Bid Open Date: November 18, 2021

Bid Time: 3:00 p.m.

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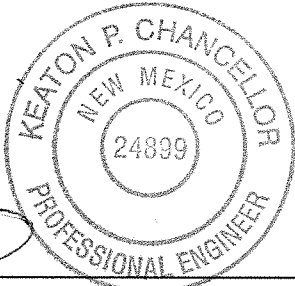
Refer to the Index to Drawings included in the plan set entitled City of Carlsbad East Rose Street Wastewater Improvements and dated October 2021.

ENGINEER CERTIFICATION

These Contract Documents and Construction Specifications for the **City of Carlsbad East Rose Street Sewer Improvements** were prepared by:

Souder, Miller & Associates
5454 Venice Avenue NE, Suite D
Albuquerque, NM 87113
(505) 299-0942 or Fax (505) 293-3430

The technical material and data contained in the specifications were prepared under the supervision and direction of Keaton Chancellor, P.E., whose seal as a Professional Engineer licensed to practice in the state of New Mexico is affixed below.

Keaton Chancellor
New Mexico PE License #24899

10/8/2021

Date

All questions about the meaning of intent of these documents shall be submitted only to the Engineer of Record stated above, IN WRITING for interpretations.

ADVERTISEMENT FOR BIDS

City of Carlsbad East Rose Street Sewer Improvements

Owner

PO Box 1569, Carlsbad, NM 88221

Address

Separate sealed BIDS for the construction of the **Bid No. 2021-10 City of Carlsbad East Rose Street Sewer Improvements** will be received by **City of Carlsbad, ATTN: Matthew Fletcher** at 101 North Halagueno Street, Room #204, Carlsbad, NM 88221 until 3:00 p.m. (Local Time), Thursday, November 18, 2021 and then at said office publicly opened and read aloud.

Project Description: This project consists of the installation of 1,450 linear feet of 8-inch force main and associated appurtenances including rehabilitation of existing manholes and pavement patch.

The Bidding Documents may be examined at the following locations:

<u>Construction Reporter, 4901 McLeod Rd. NE Suite 200A, Albuquerque, NM 87109</u>	<u>(505) 243-9793</u>
<u>Dodge Data & Analytics at: www.construction.com</u>	<u>(800) 393-6343</u>
<u>Souder, Miller & Associates, 5454 Venice Ave. NE, Suite D, Albuquerque, NM 87113</u>	<u>(505) 299-0942</u>

Copies of the Bidding Documents in electronic media format may be obtained at the website of the ENGINEER, Souder, Miller & Associates, at www.soudermiller.com, at no cost. Bidding Documents may also be accessed from the City of Carlsbad bid advertisement online portal. Bidders are responsible for monitoring the website referenced above for notifications of changes and addenda related to this project.

Resident Contractor and Resident Veteran Contractor Preferences shall apply to this Project per Section 13-1-21 NMSA 1978 (as amended).

A PRE-BID MEETING will be held at the intersection of Old Cavern Highway and E. Rose Street on October 26, 2021 at 11:30 a.m.

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

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

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

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained via the Engineer’s website (www.soudermiller.com) in the number and format stated in the advertisement or invitation to bid. The deposit, if applicable, will be refunded to each document holder of record who returns a complete set of Bidding Documents in good condition within 30 days after opening of Bids.

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

2.03 Bidding Documents in electronic media format are furnished to bidding contractors for the sole purpose of preparing bids, and not for construction. The selected construction Contractor shall not rely on files provided in electronic media format for construction but rather hard copies of such data provided by the Engineer or Owner upon award of the Contract.

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

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 Prior to bidding on the Project, Bidder must carry all licenses required under New Mexico state law to complete the Work, and be duly registered with the New Mexico Department of Workforce Solutions with an “Active” status. Refer to Title 14 Housing and Construction of the New Mexico Administrative Code (NMAC), Chapter 6, Part 6, for a listing of classifications of licenses and certificates issued by the Construction Industries Division (CID) of the New Mexico Regulation and Licensing Department required by law to perform the Work. All Subcontractors must carry all licenses required under New Mexico state law to complete the work which they are to perform. Bidder and all Subcontractors must be properly licensed according to the requirements of the Construction Industries Licensing Act, Chapter 60, Article 12 NMSA 1978 and ensure that such licenses shall remain in effect for the duration of the Work and warranty periods. All tiers of Subcontractors whose portion of the Work is valued at greater than \$60,000 must also be duly registered with the New Mexico Department of Workforce Solutions prior to submittal of Bid, per Article 22 below. All electrical work, whether performed by Bidder or Bidder’s Subcontractor, shall be performed by a licensed electrician.

A. To demonstrate Bidder’s qualifications to perform the Work, the Bidder shall complete and submit the Bidder’s Qualifications Statement included in the Project Manual along with all supporting data together with the Bid, which will be used in the evaluation of the Bid prior to Award, as stipulated in Article 19 of these Instructions to Bidders. The Bidder may be considered non-responsive if the Bidder’s Qualifications Statement is not submitted in a timely manner.

- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

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

4.01 *Site and Other Areas*

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

4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

- 1. The Supplementary Conditions identify:
 - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
 - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
- 2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
- 3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- 4. Geotechnical Report: The Bidding Documents contain a geotechnical report. The geotechnical report describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations.

The conditions described in the geotechnical report are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on these results and descriptions of conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the geotechnical report, all other Contract Documents, Technical Data, other available

information, and observable surface conditions. Not all potential subsurface conditions are covered in the geotechnical report.

Nothing in the geotechnical report is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.

- B. **Underground Facilities:** Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others. Bidder shall, per the provisions in the following paragraph, undertake additional subsurface investigation work to develop a sound understanding of subsurface conditions prior to preparing the Bid.
- C. **Adequacy of Data:** Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

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

4.05 *Other Work at the Site*

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

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

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

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

ARTICLE 6 – PRE-BID CONFERENCE

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

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

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

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent (5%) of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

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

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of

the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

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

ARTICLE 9 – CONTRACT TIMES

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

ARTICLE 10 – LIQUIDATED DAMAGES

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

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

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

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 If a List of Proposed Subcontractors is identified as a required attachment to the Bid Proposal, the Bidder is required to identify all Subcontractors whose subcontracted work surpasses the Subcontractor listing threshold of five thousand dollars (\$5,000). Firms identified in the List of Proposed Subcontractors shall not be substituted except as permitted under 13-4-36 NMSA 1978 of the Subcontractors’ Fair Practices Act.
- 12.02 If the Bidder fails to specify a Subcontractor in excess of the listing threshold, the Bidder represents that the Bidder, as the prime Contractor, is fully qualified to perform that portion of the Work. For each such listed Subcontractor, the Bidder shall include the following information:
- A. the name of Subcontractor that will perform work or labor or render service on the project identified in the Contract Documents and the city or county of its principal place of business; and

- B. the category of the work that will be done by each Subcontractor; only one Subcontractor may be listed for each category of work as defined by the Bidder.
- 12.03 Contractor shall not substitute any person as Subcontractor in place of those identified on the List or Proposed Subcontractors without prior approval from Owner. (§ 13-4-36 NMSA 1978) The same applies to equipment manufacturers identified on the Equipment Suppliers List, when such a list is included in the Project Manual.
- 12.04 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.05 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.06 If requested by Owner, the apparent Successful Bidder shall provide to Owner an experience statement with pertinent information regarding similar projects and other evidence of qualification for each proposed Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, without an increase in Bid price.
- 12.07 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

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

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

ARTICLE 14 – BASIS OF BID

14.01 *Unit Price*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14.02 *Allowances*

- A. For cash allowances, when not already identified on the Bid Form, the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 Bidder shall submit the completed Bid Form together with the Bid security and other documents required to be submitted together with Bid under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with

the notation "BID ENCLOSED for the City of Carlsbad East Rose Street Sewer Improvements." A mailed Bid shall be addressed to City of Carlsbad, Attn: Matthew Fletcher, Purchasing Manager.

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

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

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

ARTICLE 17 – OPENING OF BIDS

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

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor irregularities not involving price, time, or changes in the Work.
- 19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

- B. If the Contract is to be awarded, Owner will award the Contract to the Bidder whose Bid is in the best interests of the Project. The Additive and/or Deductive Bid Items, as well as Alternate Bid Items are listed in order of priority on the Bid Form. Award will be made to the lowest responsible and responsive Bidder that offers the lowest aggregate amount for the Base Bid, plus or minus (in the order stated in the list of priorities on the Bid Form) those Additive or Deductive Bid Items, respectively, and Alternate Bid Items (if applicable) that fit within the funds determined available, and are in the Owner's best interests. However, in the case of additive bid items, if adding another item from the bid schedule list of priorities would make the award exceed the available funds for all Bidders, the Owner reserves the right to skip that item and go to the next item from the list of Additive Bid Items. Ultimately, all Bids will be evaluated on the basis of the same Base Bid plus Additive or Deductive, and Alternate Bid Items.
- C. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- 19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.
- 19.06 A Bid submitted by a resident contractor that has a valid resident business certificate issued by the taxation and revenue department pursuant to Section 13-1-22 NMSA 1978 (as amended) but does not include a resident veteran business, shall be deemed five percent (5%) lower than the Bid actually submitted, pursuant to Section 13-1-21 NMSA 1978 (as amended). When a joint bid or joint proposal is submitted by both resident and nonresident contractors, the resident contractor preference provided shall be reduced in proportion to the percentage of the contract, based on the dollar amount of the goods or services provided under the contract, that will be performed by a nonresident contractor as specified in the joint bid or joint proposal.
- 19.07 A Bid submitted by a resident veteran contractor that has a valid resident veteran business certificate issued by the taxation and revenue department pursuant to Section 13-1-22 NMSA 1978 (as amended), and with annual gross revenues of up to three million dollars (\$3,000,000) in the preceding tax year, shall be deemed ten percent (10%) lower than the Bid actually submitted, pursuant to Section 13-4-2 NMSA 1978 (as amended). When a joint bid or joint proposal is submitted by a combination of resident veteran, resident or nonresident contractors, the preference provided pursuant to Section 13-1-22 NMSA 1978 shall be calculated in proportion to the percentage of the contract, based on the dollar amount of the goods or services provided under the contract, that will be performed by each contractor as specified in the joint bid or joint proposal.
- 19.08 The resident contractor preference and resident veteran contractor preference shall not be awarded together. If the resident veteran contractor preference applies, it shall be in place of the 5% resident contractor preference.
- 19.09 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of the Instructions to Bidders, is

lowest, after the 5% resident contractor preference or 10% resident veteran contractor preference is considered.

19.10 Protests:

- A. Any Bidder, Offeror, or Contractor who is aggrieved in connection with this procurement (Bid) may protest to the Owner in accordance with the Owners' requirements. The protest should be made in writing within twenty-four (24) hours after knowledge of the facts or occurrences giving rise thereto, but in no case more than fifteen (15) calendar days after knowledge of the facts or occurrences giving rise to the protest. (§ 13-1-172 NMSA 1978)
- B. The complete procedures and requirements regarding protest are available from the Owner upon request. (§ 13-1-172 to § 13-1-176 NMSA 1978)

ARTICLE 20 – BONDS AND INSURANCE

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

ARTICLE 21 – SIGNING OF AGREEMENT

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

ARTICLE 22 – SALES AND USE TAXES

22.01 New Mexico Gross Receipts Tax shall not be included in the Bid, except where specifically requested on the Bid form.

ARTICLE 23 – RETAINAGE

23.01 No retainage will be held on the project.

23.02 For the present project, a total of forty-five (45) days is required by the Owner to process any payment related to the Work, as detailed in the Supplementary Conditions.

ARTICLE 24 – NM DEPARTMENT OF WORKFORCE SOLUTIONS REGISTRATION

24.01 A Bidder that submits a Bid valued at more than sixty thousand dollars (\$60,000) must be registered with the Labor Relations Division, New Mexico Department of Workforce Solutions (NMDWS), Public Works Bureau, with an "Active" status, prior to submittal of Bid. The Bidder must enter his NMDWS registration number on the Bid Form and include a copy of the registration with the NMDWS as per Article 15 herein. The Bid presented by a Bidder who does not meet this requirement shall not be considered for award, pursuant to NMSA 1978, Section 13-4-13.1.

- 24.02 All tiers of Subcontractors shall be subject to this same requirement. The Bidder must also enter the Labor Relations Division, New Mexico Department of Workforce Solutions (NMDWS), Public Works Bureau registration number on the List of Proposed Subcontractors for each Subcontractor when the value of the subcontracted work will exceed sixty thousand dollars \$60,000, as stated above. Any Subcontractor who lacks current registration, with an "Active" status, with NMDWS as of the date of Bid will be rejected, and the General Contractor will be required to substitute another registered Subcontractor acceptable to the Owner without any increase in Bid price.

ARTICLE 25 – SUBCONTRACTORS FAIR PRACTICES ACT

- 25.01 The Subcontractors Fair Practices Act (SCFPA) requires that Payment and Performance Bonds be prepared and presented by the prime Contractor and first-tier Subcontractors only. The Subcontractor's bonds are to be payable to the prime Contractor, not the Owner.
- 25.02 The Performance and Payment bond provided by an affected Subcontractor should follow current law in the SCFPA (§ 13-4-37 NMSA 1978) that is:
- A. Be issued by a corporate surety authorized to do business in New Mexico in accordance with the New Mexico Insurance Code;
 - B. Be a surety listed in the US Treasury Circular 570;
 - C. Name the prime Contractor as the obligee.
- 25.03 Pursuant to NMSA 1978, Section 13-1-148.1, a Subcontractor shall provide Performance and Payment Bonds if the Subcontractor's contract (to the Contractor) for work to be performed is one hundred twenty-five thousand dollars (\$125,000), or more. Failure of a Subcontractor to provide the required bonds shall not subject Owner to any increase in cost due to approved substitution of Subcontractor.
- 25.04 The Performance and Payment Bond required shall be provided to the general Contractor at the time the subcontract is executed. The Performance and Payment Bond is at the expense of the Subcontractor and should clearly state the amount and requirements of the bond. (§ 13-4-37 NMSA 1978)

ARTICLE 26 – NEW MEXICO STATE PROCUREMENT CODE

- 26.01 The Contractor is advised that the New Mexico State Procurement Code, Sections 13-1-28 through 13-1-199, NMSA 1978 imposes civil and criminal penalties for its violation. In addition, the New Mexico criminal statutes impose felony penalties for illegal bribes, gratuities, and kickbacks.

BID FORM

City of Carlsbad East Rose Street Sewer Improvements

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

City of Carlsbad
Attn: Matthew Fletcher
101 N. Halagueno Street
Carlsbad, New Mexico 88221

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

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

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

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>	<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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

Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

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

ARTICLE 5 – BASIS OF BID

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

Note: Gross receipts tax not included.

Item No.	Description	Unit	Est. Qty	Unit Price	Total Price
1	Mobilization and Demobilization	LS	1		
2	Traffic Control	LS	1		
3	Material Testing Allowance	Allow	1	\$ 6,500.00	\$ 6,500.00
4	Bypass Pumping during manhole rehabilitation, CIP	LS	1		
5	Construction Staking, including pipe alignments, appurtenances, and surveyed as-builts, CIP	LS	1		
6	Furnish and Install 8-inch C-900 PVC DR18 Pipe, including all trenching, required fittings, restraints, bedding, backfill, tracer wire, warning tape, compaction, testing, and site restoration, CIP	LF	1450		

7	Furnish and install 10-inch SDR 35 PVC Pipe, including all trenching, required fittings, bedding, backfill, tracer wire, warning tape, compaction, testing, and site restoration, CIP	LF	10		
8	Furnish and Install 4-ft Diameter Precast Type E Concrete Manhole, up to 6' depth, including cover, collar, lid, benching, interior epoxy coatings, subgrade preparation, new sewer line connections, final adjustment to grade, and all materials, labor, excavation, backfill, compaction, testing, and site restoration, CIP	EA	1		
9	Furnish and Install 4-ft Diameter Precast Type E Concrete Drop Manhole, over 10' depth, including cover, collar, lid, cast-in-place base and bottom ring, benching, interior epoxy coatings, all fittings, valve box and lid, concrete encasement, subgrade preparation, new and existing sewer line connections, final adjustment to grade, and all materials, labor, excavation, backfill, compaction, testing, and site restoration, CIP	EA	1		
10	Connect New Force Main to Existing Force Main, including abandonment of existing force main, all materials, fittings, and labor, CIP	LS	1		
11	Rehabilitation of existing manholes, including surface preparation, application of epoxy coating per CoC Standard Infrastructure Specifications, and Testing, CIP	SF	290		
12	Remove and Replace Asphalt to match existing road section (including all materials, labor, saw-cutting and disposal of material, subgrade preparation, 6" of basecourse, prime coat, and tack coat), CIP	SY	680		

TOTAL OF BID: \$ _____

IN WORDS: _____

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

ARTICLE 6 – TIME OF COMPLETION

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

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

ARTICLE 7 – ATTACHMENTS TO THIS BID

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

- A. Required Bid security;
- B. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. Required Bidder Qualification Statement with supporting data;
- E. Evidence of authority to do business in the state of the Project;
- F. New Mexico Contractor's License No.: _____;
- G. Copy of Registration with the Labor Relations Division, New Mexico Department of Workforce Solutions, Public Works Bureau;
- H. Copy of a valid resident business certificate or valid resident contractor certificate issued by the taxation and revenue department of the State of New Mexico (if applicable);
- I. Copy of a valid resident veteran business certificate or valid resident veteran contractor certificate issued by the taxation and revenue department of the State of New Mexico (if applicable);
- J. Campaign Contribution Disclosure Form; and

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

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

By:

[Signature] _____

[Printed name] _____

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

Attest:

[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

New Mexico Department of Workforce Solutions Registration No. _____

Is Bidder eligible for Resident Contractor Preference or Resident Veteran Contractor Preference as defined in the Instructions to Bidders?

Yes _____ Circle one: Resident Contractor Resident Veteran Contractor
No _____ Preference Preference

If yes, attach documentation of Resident Contractor or Resident Veteran Contractor eligibility.

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____

\$ _____

(Words)

(Figures)

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

BIDDER

SURETY

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:

Signature

By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Signature

Attest:

Signature

Title

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

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

LIST OF PROPOSED SUBCONTRACTORS

The following listing must be completed and signed by the Bidder and submitted with the Bid Proposal. Bids submitted without this completed and signed listing or with more than one listed for each item may be considered non-responsive. The subcontractor listing threshold shall be as indicated in the Instructions to Bidders. If none of the work will be subcontracted, Bidder shall write "NONE", sign the sheet, and include with Bid to avoid being found non-responsive.

The General Contractor will determine categories of work that will be performed by the General Contractor, Subcontractors, and Tiers of Subcontractors. The following will be employed to perform the designated categories of work under this Contract.

Prior to award of the contract to the lowest qualified Bidder, the Contractor may be required to supply additional information regarding the Subcontractors listed below, as called for in the Instructions to Bidders, Bidder's Qualifications Statement, and in the technical specifications.

Contractor shall not substitute any person as Subcontractor in place of those identified on this form without prior approval from Owner. (§ 13-4-36)

Important Note Related to Public Works Projects: Contractor and all tiers of Subcontractors must be in compliance with the New Mexico Public Works Minimum Wage Act. Any Subcontractor whose work is valued at greater than \$60,000 must be registered with the Labor Relations Division, New Mexico Department of Workforce Solutions, Public Works Bureau at the time of Bid [13-4-13.1 NMSA 1978], and their registration number included below. If such registration is not in place and current as of the date of Bid, the Subcontractor will be rejected and the General Contractor will be required to substitute another Subcontractor acceptable to the Owner without any increase in Bid price.

* Category of Work	Firm Name and Business Address, Phone # and License Number of Subcontractors	** Range	NM Department of Workforce Solutions Registration No. (if applicable)

List of Proposed Subcontractors - Continued

* Category of Work	Firm Name and Business Address, Phone # and License Number of Subcontractors	** Range	NM Department of Workforce Solutions Registration No. (if applicable)

Use additional sheets if necessary.

Attest: _____

Authorized Officer

Date

Name and Title

Name of Firm

* Place title of subcontractor specialty.

** Subcontractor's contract range: In the column marked "Range", enter the letter corresponding to the subcontract amount.

A = Equal to or greater than \$5,000 but less than \$15,000

B = Equal to or greater than \$15,000 but less than \$50,000

C = Equal to or greater than \$50,000

LIST OF PROPOSED SUPPLIERS

The following listing must be completed and signed by the Bidder and submitted with the Bid Proposal. Bids submitted without this completed and signed listing or with more than one listed for each item may be considered non-responsive.

Prior to award of the contract to the lowest qualified Bidder, the Contractor may be required to supply additional information regarding the material Suppliers listed below, as called for in the Instructions to Bidders, Bidder's Qualifications Statement, and in the technical specifications.

Firm Name, Business Address and Telephone #	General description of materials to be provided by proposed Supplier

Use additional sheets if necessary.

Attest: _____

Authorized Officer

Date

Name and Title

Name of Firm

BIDDER'S QUALIFICATIONS STATEMENT

Important Note:

Completion of this statement is required of all Bidders and must be submitted together with the Bid, as stipulated in the Instructions to Bidders.

PROJECT TITLE: City of Carlsbad East Rose Street Sewer Improvements

SUBMITTED BY: _____
(Print or Type Name of Bidder)

ADDRESS: _____

The undersigned certifies the truth and correctness of all statements and of all answers to questions made hereinafter. Use additional sheets for any responses, as necessary.

1. How many years has your organization been in business as a utilities contractor? _____

2. How many years has your organization been in business under its present name? _____

3. If a corporation, answer the following:

a. Date of Incorporation: _____

b. State of Incorporation: _____

c. President's Name: _____

d. Vice President's Name: _____

c. Secretary or Clerk's Name: _____

d. Treasurer's Name: _____

4. If individual or partnership, answer the following:

a. Date of Organization: _____

b. Name and Address of all Partners:
(State if general or limited partnership)

5. If other than corporation or partnership, describe organization and name principals. _____

6. Do you plan to subcontract any part of this Project? _____ If so, briefly describe below and identify subcontractors on the List of Proposed Subcontractors form included in these Contract Documents, that meet the listing threshold. _____

7. Has any construction contract to which you have been a party, or any subcontractor identified on the List of Proposed Subcontractors form has been a party, been terminated for convenience or for cause; have you ever been debarred from contracting with any entity, public or private; have you ever terminated work on a project prior to its completion for any reason; have you ever filed a claim for disputed work; has any owner or prime contractor to which you've provided a performance bond ever put your surety on notice of their intent to terminate; has any surety which issued a performance bond on your behalf ever completed the work in its own name or financed such completion on your behalf; has any surety expended any monies in connection with the contract for which they furnished a bond on your behalf; has any subcontractor or supplier ever placed a claim against your payment bond; have you been late in completing a project during the last five years resulting in the assessment of liquidated damages? If the answer to any portion of this question is "yes", please furnish details of all such occurrences including name of subcontractor (if applicable), owner, architect or engineer, and surety, and name and date of project. _____

12. List the states and categories of construction in which your organization is legally qualified to do business. Include all license classifications your organization possesses in the State of New Mexico, as stipulated in the New Mexico Administrative Code (NMAC), Title 14, Chapter 6, Part 6.

13. List name, address, and telephone number of an individual who represents each of the following and who may be contacted for a financial reference.

a. A surety: _____

b. A bank: _____

c. A major material supplier: _____

14. The Owner may require the low Bidder to submit a financial statement, prepared on an accrual basis in a form that clearly indicates Bidder's assets, liabilities and net worth, plus additional information concerning past job performance such as list of last ten jobs you purchased a bond for along with name of surety on each, prior to issuance of the Notice of Award.

Dated this _____ day of _____ 20_____

Bidder: _____
(Print or Type Name of Bidder)

By: _____

Title: _____

(Seal, if Corporation)

CAMPAIGN CONTRIBUTION DISCLOSURE FORM

Pursuant to the Procurement Code, Sections 13-1-28, et seq., NMSA 1978 and NMSA 1978, § 13-1-191.1 (2006), as amended by Laws of 2007, Chapter 234, any prospective contractor seeking to enter into a contract with any state agency or local public body **for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources** must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars (\$250) over the two year period.

Furthermore, the state agency or local public body may cancel a solicitation or proposed award for a proposed contract pursuant to Section 13-1-181 NMSA 1978 or a contract that is executed may be ratified or terminated pursuant to Section 13-1-182 NMSA 1978 of the Procurement Code if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

The state agency or local public body that procures the services or items of tangible personal property shall indicate on the form the name or names of every applicable public official, if any, for which disclosure is required by a prospective contractor.

THIS FORM MUST BE INCLUDED IN THE REQUEST FOR PROPOSALS AND MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

“Applicable public official” means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

“Campaign Contribution” means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official's behalf for the purpose of electing the official to statewide or local office. “Campaign Contribution” includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

“Family member” means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son-in-law of (a) a prospective contractor, if the prospective contractor is a natural person; or (b) an owner of a prospective contractor.

“Pendency of the procurement process” means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

“Prospective contractor” means a person or business that is subject to the competitive sealed proposal process set forth in the Procurement Code or is not required to submit a competitive sealed proposal because that person or business qualifies for a sole source or a small purchase contract.

“Representative of a prospective contractor” means an officer or director of a corporation, a member or manager of a limited liability corporation, a partner of a partnership or a trustee of a trust of the prospective contractor.

Name(s) of Applicable Public Official(s) if any: _____
(Completed by State Agency or Local Public Body)

DISCLOSURE OF CONTRIBUTIONS BY PROSPECTIVE CONTRACTOR:

Contribution Made By: _____

Relation to Prospective Contractor: _____

Date Contribution(s) Made: _____

Amount(s) of Contribution(s) _____

Nature of Contribution(s) _____

Purpose of Contribution(s) _____

(Attach extra pages if necessary)

Signature Date

Title (position)

--OR--

NO CONTRIBUTIONS IN THE AGGREGATE TOTAL OVER TWO HUNDRED FIFTY DOLLARS (\$250) WERE MADE to an applicable public official by me, a family member or representative.

Signature Date

Title (Position)

NOTICE OF AWARD

Date of Issuance:

Owner: City of Carlsbad Owner's Contract No.: 2021-10
Engineer: Souder, Miller & Associates Engineer's Project No.: 6E29911
Project: East Rose Sewer Improvements Contract Name: City of Carlsbad East Rose
Sewer Improvements

Bidder:

Bidder's Address:

TO BIDDER:

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

_____ .
[describe Work, alternates, or sections of Work awarded]

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

[] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

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

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

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

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

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

Owner: _____
Authorized Signature

By: _____

Title: _____

Date Issued: _____

Copy: Engineer

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

THIS AGREEMENT is by and between _____ City of Carlsbad _____ (“Owner”) and

_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

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

Installation of 1,450 linear feet of 8-inch force main and associated appurtenances including rehabilitation of existing manholes and pavement patch.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is described as follows:
The City of Carlsbad East Rose Street Sewer Improvements.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Miller Engineers, Inc. d/b/a Souder, Miller & Associates (“Engineer”) who will act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 45 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 75 calendar days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the

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

1. Substantial Completion: Contractor shall pay Owner \$2,500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$2,500 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

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

- A. For all Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit, with an estimated total of all unit price work equivalent to \$ _____

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

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments;*

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

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
 - a. 100 percent of Work completed; and

- b. 100 percent of cost of materials and equipment not incorporated in the Work.
 - c. No retainage will be held.
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

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

ARTICLE 7 – INTEREST

- 7.01 All amounts not paid when due shall bear interest at the rate of 1.5% per month, or other rate mutually agreed between the Owner and Contractor prior to presentation of corresponding Application for Payment.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
 - F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies,

or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 7, inclusive).
 - 2. Performance bond (pages 1 to 3, inclusive).
 - 3. Payment bond (pages 1 to 3, inclusive).
 - 4. Contractor's Bid Form EJCDC C-410 (pages 1 to 6, inclusive), plus required attachments to the Bid as stipulated in Article 7 of the Bid Form.
 - 5. General Conditions (pages 1 to 65, inclusive).
 - 6. Supplementary Conditions (pages 1 to 5, inclusive).
 - 7. Appendices as listed in the Index to Appendices of the Project Manual.
 - 8. Technical Specifications as listed in the table of contents of the Project Manual.
 - 9. Drawings listed on the attached sheet index.
 - 10. Addenda (numbers ___ to ___, inclusive).
 - 11. The following, which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

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

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

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

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

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

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____

(where applicable)

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

Agency Concurrence:

Agency Concurrence:

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

Agency: _____

By: _____

Date: _____

Title: _____

PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: None See Paragraph 16

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

CONTRACTOR AS PRINCIPAL

SURETY

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

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

By: _____
Signature

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

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

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

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

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

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

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

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

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

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

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

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

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence,

to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims

for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

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

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

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

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

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

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: None See Paragraph 18

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

CONTRACTOR AS PRINCIPAL

SURETY

_____ *(seal)*

Contractor's Name and Corporate Seal

_____ *(seal)*

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Title

Title

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

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
 - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 7. The total amount of previous payments received by the Claimant; and
 - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
 - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

CERTIFICATE OF INSURANCE

Certificate of Insurance to be inserted here, in accordance with the General Conditions and coverages as stipulated in the Supplementary Conditions.

INFRASTRUCTURE IMPROVEMENTS PROJECT
 FUNDED BY CITY OF CARLSBAD
CITY OF CARLSBAD
East Rose Street Sewer Improvements
CONTRACTOR'S APPLICATION FOR PAYMENT

CONTRACT NO. _____
 APPLICATION FOR PAYMENT NO. _____
 PAGE 1 OF 4

OWNER: _____ CONTRACTOR: _____ PERIOD OF ESTIMATE
 FROM: _____
 TO: _____

CONTRACT CHANGE ORDER SUMMARY				ESTIMATE	
No.	Agency Approval Date	Amount			
		Additions	Deductions		
				1. Original Contract	\$ -
				2. Change Orders	\$ -
				3. Revised Contract (1 + 2)	\$ -
				4. Work Completed	\$ -
				5. Stored Materials	\$ -
				6. Subtotal (4 + 5)	\$ -
				7. Retainage	\$ -
				8. Previous Payments	\$ -
				9. Subtotal (6-7-8)	\$ -
				10. Tax @ 7.6458%	\$ -
				11. Current Payment Due	\$ -
TOTALS		\$ -	\$ -		
NET CHANGE		\$ -			

CONTRACT TIME

Original (days) _____
 Revised _____
 Remaining _____

On Schedule Yes No

Starting Date _____
 Projected Completion _____

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

ENGINEER'S CERTIFICATION

The undersigned certifies that, to the best of their knowledge and belief, the quantities shown in this Application for Payment are correct and the work has been performed in general conformance with the Contract Documents.

Engineer: Souder, Miller & Associates
 By _____
 Date _____

Contractor: _____
 By _____
 Date _____

ACCEPTED BY AGENCY:

The review and acceptance of this Application for Payment does not attest to the correctness of the quantities shown or that the work has been performed in accordance with the Contract Documents.

APPROVED BY OWNER:

Owner: _____
 By _____
 Date _____

By _____
 Title _____
 Date _____

CONSTRUCTION PROGRESS
CITY OF CARLSBAD
East Rose Street Sewer Improvements

Application for Payment No. ____
(construction period)

Contractor: _____

Item	Description	Unit Price	Original Amount	Original Value	Revised Amount	Revised Value	Work Completed			Total Completed	Percent Complete	Balance To Finish	
							Qty	Previous	Qty This Period				
1				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
2				\$ -		\$ -	0	\$ -	5	\$ -	\$ -	0.0%	\$ -
3				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
4				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
5				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
6				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
7				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
8				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
9				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
10				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
11				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
12				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
13				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
14				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
15				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
16				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
17				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
18				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
19				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
20				\$ -		\$ -	0	\$ -	0	\$ -	\$ -	0.0%	\$ -
TOTALS (TAX NOT INCLUDED)				\$ -		\$ -		\$ -		\$ -	\$ -	0.0%	\$ -

MONTHLY CONSTRUCTION PROGRESS CERTIFICATE City of Carlsbad East Rose Street Sewer Improvements		CONTRACT NO.	
		APPLICATION FOR PAYMENT NO.	
OWNER:		CONTRACTOR:	
		CONTRACT PERIOD FROM: TO:	
Field Orders Issued This Period:			
1		Issued <input type="checkbox"/>	Under Review <input type="checkbox"/>
2		Issued <input type="checkbox"/>	Under Review <input type="checkbox"/>
3		Issued <input type="checkbox"/>	Under Review <input type="checkbox"/>
Change Orders/Contractor Claims This Period:		Changes in Contract	
		Days	Price
			\$ -
Under Review (Outstanding) <input type="checkbox"/> New <input type="checkbox"/> Settled <input type="checkbox"/>			\$ -
			\$ -
Under Review (Outstanding) <input type="checkbox"/> New <input type="checkbox"/> Settled <input type="checkbox"/>			\$ -
			\$ -
Under Review (Outstanding) <input type="checkbox"/> New <input type="checkbox"/> Settled <input type="checkbox"/>			\$ -
			\$ -
Under Review (Outstanding) <input type="checkbox"/> New <input type="checkbox"/> Settled <input type="checkbox"/>			\$ -
			\$ -
On Schedule? Yes <input type="checkbox"/> No <input type="checkbox"/>		Comments:	
Days Left for Completion			
Briefly Describe Project Progress During This Period:			
Issues Addressed During This Period (Indicate Any Issues That Remain Unresolved):			
Engineer's Attestation:		Owner Concurrence:	*Contractor Concurrence:
X		X	X
Signature		Signature	Signature
Print Name		Print Name	Print Name
Title		Title	Title
* Contractor agrees this certificate is a complete account of all change orders/claims for this contract period, and all outstanding change orders/claims from previous contract periods and waives any rights to further adjustments in contract times or price for any change orders/claims that originated in this contract period.			

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: City of Carlsbad	Owner's Contract No.: 2021-10
Contractor:	Contractor's Project No.:
Engineer: Souder, Miller & Associates	Engineer's Project No.: 6E29911
Project: East Rose Sewer Improvements	Contract Name: City of Carlsbad East Rose Sewer Improvements

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

- All Work The following specified portions of the Work:

Date of Substantial Completion

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

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

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

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

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

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

has declined to address. A demand for money or services by a third party is not a Claim.

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

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

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

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

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
 1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
 1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
 1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

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

2.02 *Copies of Documents*

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

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and

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

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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

2.05 *Initial Acceptance of Schedules*

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

2.06 *Electronic Transmittals*

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

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

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

3.02 *Reference Standards*

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

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

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

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

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

3.05 *Reuse of Documents*

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

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

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

4.02 *Starting the Work*

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

4.03 *Reference Points*

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

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

5.01 *Availability of Lands*

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

5.02 *Use of Site and Other Areas*

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

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

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

5.04 *Differing Subsurface or Physical Conditions*

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

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

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

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

5.05 *Underground Facilities*

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

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

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

5.06 *Hazardous Environmental Conditions at Site*

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

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

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

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

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

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

6.04 *Owner's Liability Insurance*

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

6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

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

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

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

7.02 Labor; Working Hours

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

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and

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

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

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

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

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

7.08 *Permits*

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

7.09 *Taxes*

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

7.10 *Laws and Regulations*

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

7.11 *Record Documents*

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

7.12 *Safety and Protection*

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

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

7.13 *Safety Representative*

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

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

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

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

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

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

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

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

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

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

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

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

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

8.02 *Coordination*

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

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

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

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 Communications to Contractor

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

9.02 Replacement of Engineer

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

9.03 Furnish Data

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

9.04 Pay When Due

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

9.05 Lands and Easements; Reports, Tests, and Drawings

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 Insurance

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

9.07 Change Orders

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

9.08 *Inspections, Tests, and Approvals*

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

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

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

9.11 *Evidence of Financial Arrangements*

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

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

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

or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

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

10.04 *Rejecting Defective Work*

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

10.05 *Shop Drawings, Change Orders and Payments*

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

10.06 *Determinations for Unit Price Work*

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

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

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

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

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

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

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

11.03 *Unauthorized Changes in the Work*

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

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

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

11.05 *Change of Contract Times*

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

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

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

11.07 Execution of Change Orders

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

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

11.08 *Notification to Surety*

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

ARTICLE 12 – CLAIMS

12.01 *Claims*

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

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

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

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

13.01 *Cost of the Work*

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

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

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

other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

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

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

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

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

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

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

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

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

14.06 *Owner May Stop the Work*

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

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

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

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

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

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

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

15.05 *Final Inspection*

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

15.06 *Final Payment*

- A. *Application for Payment:*
 - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

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

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

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

15.08 *Correction Period*

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

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

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

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

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

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

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

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

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

18.02 *Computation of Times*

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

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

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

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Headings*

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

SUPPLEMENTARY CONDITIONS

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INTRODUCTION

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

AMENDED OR SUPPLEMENTED STANDARD GENERAL CONDITIONS

SC-2.05.B Video Documentation

Add the following new paragraph immediately after Paragraph 2.05.A:

- B. *Video Documentation:* Prior to beginning construction activities, the Contractor will furnish full-coverage video documentation of the entire construction site. The video must include coverage of all areas and adjacent features that may potentially be impacted by the impending construction work.
1. Prior to groundbreaking on any section of pipeline or site work, video documentation must be submitted to the Engineer for review and approval. Video documentation must be approved as sufficient by Engineer before groundbreaking may proceed.
 2. Show station markers, mailboxes, fences, structures, driveways, signs, culverts, landscape improvements, and other existing site features.
 3. Include project description, applicable stations or sites, and date taken in the file name of every video, using the following filename convention: "<project name>_<begin station>to<end station>(or <site descriptor>)_<date>".
 4. Video submittals may be rejected because of failure to include or document any of the items above, a lack of visual or audio clarity, or for any other deficiency that prevents the Owner/Engineer from easily viewing and documenting the pre-construction conditions of the pipeline and sites.
 5. Contractor must submit two (2) copies of the video documentation on DVD format as part of the submittal process. One copy to Owner and one copy to Engineer.

SC-3.01.F Bidding Documents in Electronic Format

Add the following new subparagraph after subparagraph GC-3.01.E:

- F. For the present Project, Bidding Documents in electronic media format are furnished to bidding contractors for the sole purpose of preparing bids, and not for construction. The selected construction Contractor shall not rely on files provided in electronic media format for construction but rather hard copies of such data provided by the Engineer or Owner upon award of the Contract.

SC-5.03 Subsurface and Physical Conditions

Add the following new paragraphs immediately after Paragraph 5.03.B:

- C. The following reports of explorations and tests of subsurface conditions at or contiguous to the Site are known to Owner:
 - 1. Report dated July 1, 2021, prepared by Souder, Miller & Associates, entitled: "City of Carlsbad East Rose Street Sewer Improvements", consisting of thirty-two (32) pages. The "technical data" contained in such report upon which Contractor may rely are boring logs and laboratory test results.
- D. The reports and drawings identified above are not part of the Contract Documents, but the "technical data" contained therein upon which Contractor may rely, as expressly identified and established above, are incorporated in the Contract Documents by reference. Contractor is not entitled to rely upon any other information and data known to or identified by Owner or Engineer.

SC-5.04 Differing Subsurface or Physical Conditions

Add the following new paragraph immediately after Paragraph 5.04.D:

- E. The circumstances and potential resulting actions described in Paragraphs 5.04.A, B, C and D do not apply in the case of subsurface or surface rock or soils. The Contractor is advised that the results of the exploration and tests of subsurface conditions at the Site as presented in the geotechnical investigation referenced in SC-5.03.C.1, are given only as an attempt to provide the Contractor with a general idea of what subsurface conditions might be expected, and Owner is not responsible for any discrepancies or inaccuracies. No additional payment will be made for rock removal and disposal, nor the importing of special bedding/backfill material to meet the specifications, nor special excavation methods required to trench in rock. In all cases, all such work will be considered incidental to the cost of related work.

SC-5.05 Underground Facilities

Delete Paragraphs 5.05.B, C, D and E in their entirety and insert the following in their place:

- B. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy (as defined in §62-14-5 NMSA 1978) in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. The Contractor will proceed to work with the underground facility owner to relocate, preserve or remove the undocumented or inaccurately marked underground facility to complete contract work. Compensation for such work, if any, will be negotiated by and between the Contractor and the facility owner, with no claim to the Owner by the Contractor for costs associated for resulting delays (Section 4.C, §62-14-5 NMSA 1978).
- C. Concurrently the Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Times, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the extent, if any, of any such adjustment in Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 12.01.

SC-5.06 Hazardous Environmental Conditions

Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings relating to Hazardous Environmental Conditions at the site are known to the Owner.
- B. Not used

SC-6.01 Performance, Payment, and Other Bonds

Add the following new paragraphs immediately after Paragraph 6.01.F:

- G. Any Contractor providing construction services in connection with the Project shall post a performance and payment bond in accordance with the requirements of NMSA 1978, Section 13-4-18, as amended.
- H. Pursuant to NMSA 1978, Section 13-1-148.1, all Subcontractors whose subcontracted work is valued at one hundred twenty-five thousand dollars (\$125,000) or more shall be subject to this same requirement as set forth in Paragraphs 6.01 A-F, except that the Subcontractor's bonds are to be payable to the prime Contractor, not the Owner. The Performance and Payment Bond required shall be provided to the general Contractor at the time the subcontract is executed, and a copy delivered to the Owner. The Performance and Payment Bond is at the expense of the Subcontractor and should clearly state the amount and requirements of the bond. (§ 13-4-37). Failure of a Subcontractor to provide the required bonds shall not subject Owner to any increase in cost due to approved substitution of Subcontractor.

SC-6.03 Contractor's Liability Insurance

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

- K. The limits of liability for insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
 - 1. Worker's Compensation (including accident and occupational disease coverages):
 - a. State: Statutory
 - b. Employer's Liability: \$ 100,000 each accident
\$ 100,000 disease-each employee
\$ 500,000 disease-policy limit

2. Commercial General Liability (including Products and Completed Operations):
 - a. Occurrence Form \$1,000,000 each occurrence
 \$2,000,000 general aggregate
 \$1,000,000 products - completed operations
3. Business/Commercial Automobile Liability:
 - a. Combined Single Limit \$1,000,000 or, equivalent split limits for Bodily Injury & Property Damage
4. Umbrella Excess Liability: \$1,000,000 each occurrence
 \$1,000,000 aggregate
5. The Contractor shall require each of his subcontractors to procure and to maintain during the life of his subcontract, General Liability Insurance of the type and in the same amounts as specified in the preceding paragraph.
6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following:

 Not Applicable

SC-6.05.A Builder's Risk Supplemental Requirements

Add the following to the list of requirements in Paragraph 6.05.A, as a numbered items:

14. be subject to a deductible amount of no more than \$1,000.00 for direct physical loss in any one occurrence.

SC-7.06.A Subcontractors

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

The Contractor shall not award work valued at more than fifty percent (50%) of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC-7.13.B Contractor Safety Representative

Add the following new paragraph immediately after Paragraph 7.13.A:

- B. Contractor Safety Representative shall personally confer with the Resident Project Representative and Engineer at least once prior to commencement of the Work and at least once per week during Project execution.

SC-7.16 Submittals

Add the following new paragraphs immediately after Paragraph 7.16.E:

- F. Contractor shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, samples, or other items requiring approval and Contractor shall reimburse Owner for Engineer's charges for such time.

- G. In the event that Contractor requests a change of a previously approved item, Contractor shall reimburse Owner for Engineer's charges for its review time unless the need for such change is beyond the control of Contractor.

SC-10.03 Project Representative

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

- B. On this Project, by agreement with the Owner, Engineer will not furnish a Resident Project Representative to represent Engineer at the Site or assist Engineer in observing the progress and quality of the Work.

SC-14.04 Acceptance of Defective Work

Replace the existing Paragraph 14.04.A with the following:

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

SC-15.01.D, 15.06.D, 16.04.A, and 16.04.B Notice of Extended Payment Provision

This contract allows the Owner to make payment within forty-five (45) days after submission of an undisputed request for payment. Therefore Paragraphs 15.01.D, 15.06.D, 16.04.A and 16.04.B shall hereby reference a period of forty-five (45) days for Owner to effect payment instead of ten (10) days and/or thirty (30) days.

SC-18.09 New Mexico State Requirements

Add the following language after Article 18.08 with the title "New Mexico State Requirements":

- A. There shall be no discrimination against any employee or applicant for employment because of race, color, creed, sex, religion, sexual preference, ancestry or national origin.

WORK CHANGE DIRECTIVE NO. _____

Date of Issuance:	Effective Date:
Owner: City of Carlsbad	Owner's Contract No.: 2021-10
Contractor:	Contractor's Project No.:
Engineer: Souder, Miller & Associates	Engineer's Project No.: 6E29911
Project: East Rose Sewer Improvements	Contract Name: City of Carlsbad East Rose Sewer Improvements

Contractor is directed to proceed promptly with the following change(s):

Description:

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

- Non-agreement on pricing of proposed change.
- Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price \$ _____ [increase] [decrease].
 Contract Time _____ days [increase] [decrease].

Basis of estimated change in Contract Price:

- Lump Sum
- Unit Price
- Cost of the Work
- Other

RECOMMENDED:	AUTHORIZED BY:	RECEIVED:
By: _____ Engineer (Authorized Signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
 Title: _____

CHANGE ORDER NO. _____

Date of Issuance:	Effective Date:
Owner: City of Carlsbad	Owner's Contract No.: 2021-10
Contractor:	Contractor's Project No.:
Engineer: Souder, Miller & Associates	Engineer's Project No.: 6E29911
Project: East Rose Sewer Improvements	Contract Name: City of Carlsbad East Rose Sewer Improvements

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

FIELD ORDER NO. _____

Date of Issuance:		Effective Date:	
Owner: City of Carlsbad		Owner's Contract No.:	2021-10
Contractor:		Contractor's Project No.:	
Engineer: Souder, Miller & Associates		Engineer's Project No.:	6E29911
Project: East Rose Sewer Improvements		Contract Name:	City of Carlsbad East Rose Sewer Improvements

Contractor is hereby directed to promptly execute this Field Order, issued in accordance with General Conditions Paragraph 11.01, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference: _____
Specification(s) Drawing(s) / Detail(s)

Description:

Attachments:

ISSUED:	RECEIVED:
By: _____ Engineer (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____
Date: _____	Date: _____

Copy to: Owner

APPENDIX A

**Minimum Wage Rate Determination
by the New Mexico Department of Workforce Solutions**



LABOR RELATIONS DIVISION

401 Broadway NE
Albuquerque, NM 87102
Phone: 505-841-4400
Fax: 505-841-4424

226 South Alameda Blvd
Las Cruces, NM 88005
Phone: 575-524-6195
Fax: 575-524-6194

WWW.DWS.STATE.NM.US

1596 Pacheco St, Suite 103
Santa Fe, NM 87505
Phone: 505-827-6817
Fax: 505-827-9676

Wage Decision Approval Summary

1) Project Title: City of Carlsbad East Rose Street Sewer Improvements
Requested Date: 10/06/2021
Approved Date: 10/07/2021
Approved Wage Decision Number: ED-21-2024-A

Wage Decision Expiration Date for Bids: 02/04/2022

2) Physical Location of Jobsite for Project:
Job Site Address: East Rose Street
Job Site City: Carlsbad
Job Site County: Eddy

3) Contracting Agency Name (Department or Bureau): City of Carlsbad
Contracting Agency Contact's Name: Matt Fletcher
Contracting Agency Contact's Phone: (575) 234-7905 Ext.

4) Estimated Contract Award Date: 11/18/2021

5) Estimated total project cost: \$384,252.45
a. Are any federal funds involved?: No
b. Does this project involve a building?: No
c. Is this part of a larger plan for construction on or appurtenant to the property that is subject to this project?: No
d. Are there any other Public Works Wage Decisions related to this project?: No
e. What is the ultimate purpose or functional use of the construction once it is completed?: To convey raw sewage from business and residents to the wastewater plant.

6) Classifications of Construction:

Classification Type and Cost Total	Description
Highway/Utilities (A) Cost: \$384,252.45	This project consists of the construction and installation of 1,457 linear feet of 8-inch force main and associated appurtenances, and two (2) new manholes, including rehabilitation of existing manholes and pavement patch.



PUBLIC WORKS PROJECT REQUIREMENTS

As a participant in a Public Works project valued at more than \$60,000 in the state of New Mexico, the following list addresses many of the responsibilities that are defined by statute or regulation to each project stakeholder.

Contracting Agency

- Ensure that all contractors wishing to bid on a Public Works project when the project is \$60,000 or more are actively registered with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> (Contractor Registration) prior to bidding.
- Please submit Notice of Award (NOA) and Subcontractor List(s) to the PWAA website promptly after the project is awarded.
- Please update the Subcontractor List(s) on the PWAA website whenever changes occur.
- All sub-contractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.
- Ninety days after project completion please go into the PWAA system and close the project. Only contracting agencies are allowed to close the project. Agents or contractors are not allowed to close projects.

General Contractor

- Provide a complete Subcontractor List and Statements of Intent (SOI) to Pay Prevailing Wages for all contractors, regardless of amount of work, to the contracting agency within 3 (three) days of award.
- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- Confirm the Wage Rate poster, provided in PWAA, is displayed at the job site in an easily accessible place.
- When the project has been completed, make sure the Affidavits of Wages Paid (AWP) are sent to the contracting agency.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.



LABOR RELATIONS DIVISION

121 Tijeras Ave NE, Suite 3000

Albuquerque, NM 87102

Phone: 505-841-4400

Fax: 505-841-4424

WWW.DWS.STATE.NM.US

Subcontractor

- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

Additional Information

Reference material and forms may be found in the New Mexico Department of Workforce Solutions Public Works web pages at: <https://www.dws.state.nm.us/Labor-Relations/Labor-Information/Public-Works>.

CONTACT INFORMATION

Contact the Labor Relations Division for any questions relating to Public Works projects by email at public.works@state.nm.us or call (505) 841-4400.



TYPE "A" - STREET, HIGHWAY, UTILITY & LIGHT ENGINEERING

Please refer to the base and fringe rate columns that pertain to the date your wage decision was approved. For instance, if your wage decision was approved on April 1, 2021, you will use the rates in the first two columns. If your wage decision was approved on May 10, 2021, use the third and fourth columns.

Trade Classification	Effective January 1, 2021 Through May,4 2021		Effective May 5, 2021	
	Base Rate	Fringe Rate	Base Rate	Fringe Rate
Bricklayer/Block layer/Stonemason	24.46	8.81	24.46	8.81
Carpenter/Lather	25.63	11.74	24.63	11.24
Carpenter- Los Alamos County	28.37	13.44	27.80	13.19
Cement Mason	17.42	6.81	17.42	6.81
Ironworker	27.35	17.49	27.00	15.75
Painter- Commercial	17.25	7.75	17.00	6.88
Plumber/Pipefitter	31.52	12.90	30.76	11.62
Electricians- Outside Classifications: Zone 1				
Ground man	23.74	13.16	23.27	12.67
Equipment Operator	34.06	15.94	33.39	15.35
Lineman/ Technician	40.07	17.57	39.28	16.91
Cable Splicer	44.08	18.65	43.21	17.95
Electricians-Outside Classifications: Zone 2				
Ground man	23.74	13.16	23.27	12.67
Equipment Operator	34.06	15.94	33.39	15.35
Lineman/ Technician	40.07	17.57	39.28	16.91
Cable Splicer	44.08	18.65	43.21	17.95
Electricians-Outside Classifications: Los Alamos				
Ground man	24.42	13.34	23.94	12.85
Equipment Operator	35.04	16.21	34.35	15.60
Lineman/ Technician	41.22	17.88	40.41	17.21
Cable Splicer	45.34	18.99	44.45	18.28



Laborers				
Group I- Unskilled	12.26	6.22	12.26	6.22
Group II- Semi-Skilled	12.56	6.22	12.56	6.22
Group III- Skilled	12.96	6.22	12.96	6.22
Group IV- Specialty	13.21	6.22	13.21	6.22
Operators				
Group I	19.15	6.54	18.79	6.34
Group II	20.11	6.54	19.72	6.34
Group III	20.21	6.54	19.82	6.34
Group IV	20.33	6.54	19.93	6.34
Group V	20.43	6.54	20.03	6.34
Group VI	20.62	6.54	20.21	6.34
Group VII	20.78	6.54	20.37	6.34
Group VIII	21.08	6.54	20.66	6.34
Group IX	28.80	6.54	28.16	6.34
Group X	32.15	6.54	31.41	6.34
Truck Drivers				
Group I-IX	16.67	8.27	16.45	7.87

NOTE: All contractors are required to pay SUBSISTENCE, ZONE AND INCENTIVE PAY according to the trade. Details are in a PDF attachment at WWW.DWS.STATE.NM.US. Search Labor Relations/Labor Information/Public Works/Prevailing Wage Rates.

For more information about the Subsistence, Zone, and Incentive Pay rates, or to file a wage claim, contact the Labor Relations Division at (505) 841-4400 or visit us online at www.dws.state.nm.us.

EXHIBIT A

Geotechnical Investigation Report

Note: The following clarification is made within the Standard General Conditions (Article 5.03.B) in regard to the “technical data” provided in this Exhibit.

- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to
1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

CITY OF CARLSBAD EAST ROSE STREET SEWER IMPROVEMENTS

Geotechnical Investigation

**Carlsbad, New Mexico
July 1, 2021**



Souder, Miller & Associates
Engineering ♦ Environmental ♦ Geomatics

5454 Venice Avenue NE, Suite D ♦ Albuquerque, NM 87113
505.299.0942 ♦ 877.299.0942 ♦ fax 505.293.3430 ♦ www.soudermiller.com



July 1, 2021

#6E29911

Mr. Ron Myers
Director of Utilities
City of Carlsbad
101 North Halagueno
Carlsbad, New Mexico 88221
(575) 885 - 6262
rwmyers@cityofcarlsbadnm.com

**RE: City of Carlsbad – East Rose Street Sewer Improvements Project
Geotechnical Investigation Report**

Dear Mr. Myers:

Souder, Miller and Associates is pleased to present the enclosed Geotechnical Investigation Report for the above referenced project. The report analyzes the existing subgrade soils within the development with recommendations for site earthwork, bedding materials, and potential for pipe bursting.

Should you have any questions, require any further information or if any portion of the report requires modification to meet your specific needs, please do not hesitate to contact our office.

Sincerely,

MILLER ENGINEERS, INC. D/B/A
SOUDER, MILLER & ASSOCIATES

A handwritten signature in black ink, appearing to read 'Sarah Garduño'.

Sarah Garduño, EIT
Staff Civil Designer
sarah.garduno@soudermiller.com

A handwritten signature in black ink, appearing to read 'Paul J. Pompeo'.

Paul J. Pompeo, P.E.
Senior Design Manager II
paul.pompeo@soudermiller.com

Enc: City of Carlsbad East Rose Street Sewer Improvements Geotechnical Investigation Report

GEOTECHNICAL INVESTIGATION
CITY OF CARLSBAD EAST ROSE STREET
SEWER IMPROVEMENTS
CARLSBAD, NEW MEXICO

Prepared for

City of Carlsbad
Utilities Department
101 North Halagueno
Carlsbad, New Mexico 88221

July 1, 2021

This document was prepared under the supervision and direction of the undersigned whose seal as a Professional Engineer, licensed to practice as such in the State of New Mexico, is affixed below.



Paul J. Pompeo, P.E.

11490
NMPE Number

07/01/2021
Date



Souder, Miller & Associates
Engineering ♦ Environmental ♦ Geomatics

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GEOTECHNICAL INVESTIGATION REPORT
CITY OF CARLSBAD EAST ROSE STREET
SEWER IMPROVEMENTS PROJECT

CARLSBAD, NEW MEXICO
JULY 1, 2021

1.0 Introduction

Souder, Miller and Associates (SMA) was retained by Mr. Myers the Utilities Director for the City of Carlsbad to prepare the following geotechnical report. From the site's subsurface investigation through performance of soil test borings, the nature of the substrata soils will be determined, and its characteristics ascertained. This information determined within this report shall then be used for the improvements of approximately 1,430 linear feet (lf) of an existing 8-inch gravity sewer line. A project location map and boring location maps are in Appendix A.

2.0 Scope of Work

The intent of the investigation is to determine the suitability of the native material for bedding and backfill as well as to determine if there are any constructability concerns such as shallow groundwater tables or potential for pipe bursting within the vicinity of the proposed gravity sewer line improvements. The extent of this subsurface study included the drilling of 3 soil test boring and the laboratory testing of these soil samples collected from the site. All testing and drilling was completed by technicians from the drilling and soils testing subcontractor, Southwest Engineering, Inc. Further discussion of the findings is in Section 6.0. These findings include:

- A review of test procedures
- An evaluation of site and subsurface conditions
- Boring logs and laboratory test results
- Earthwork recommendations
- Constructability concerns

3.0 Site Description

A review of the project site was made by SMA personnel prior to drilling operations to document the current site conditions and characteristics. The project site is located within the central portion of Carlsbad, New Mexico. The proposed location of the gravity sewer line improvements is within the existing alignment of the 8-inch gravity sewer line within East Rose Street Right-of-Way. The improvements are anticipated to begin at the eastern end of East Rose Street, continue traveling west along the existing alignment of the existing 8-inch gravity sewer line where it terminates at the intersection of East Rose Street and Old Cavern Highway. The extents of the improvements are within the existing right-of-way of the roadways identified above. Development of the area include excavation and underground utility installation.

4.0 Investigation Procedures

The general field procedures employed by SMA are summarized in ASTM Specification D-420 entitled "Investigation and Sampling Soils and Rocks for Engineering Purposes." This recommended practice lists recognized methods for determining soil and rock distribution and groundwater conditions. These methods include geophysical and in situ methods as well as borings.

A CME-85 Drilling Rig, mounted on a Kenworth T800, equipped with hollow-flight augers, penetration and soil sampling equipment was used on this project. Borings are drilled to obtain subsurface samples using one of three alternate techniques depending upon the subsurface conditions. These techniques are continuous 2¼ or 8¼ inch I.D. hollow stem augers, wash borings using roller cone or drag bits (mud or water) or continuous flight augers (ASTM D1452). These drilling methods are not capable of penetrating through material designated as "refusal materials." Refusal, thus indicated, may result from hard cemented soil, soft weathered rock, coarse gravel or boulders, thin rock seams, or the upper surface of sound continuous rock. Core drilling procedures are required to determine the character and continuity of refusal materials.

The subsurface conditions encountered during drilling are reported on a field test boring record by the SEI Chief Driller. The record contains information concerning the boring method, samples attempted and recovered, indications of the presence of various materials such as coarse gravel, cobbles, etc., and observation of groundwater. It also contains the driller's interpretation of the soil conditions between samples. Therefore, these boring records contain both factual and interpretive information.

The soil and rock samples plus the field boring records are reviewed by the engineering staff at SMA. The staff classifies the soils in general accordance with the procedures outlined in ASTM Specification D2488 and prepares the final boring records which are the basis for all evaluations and recommendations. The final test boring records represent our interpretation of the contents of the field records based on the results of the engineering examination and test of the field samples. These records depict subsurface conditions at the specific locations and at the particular time when drilled. Soil conditions at other locations may differ from conditions occurring at the boring locations. Also, the passage of time may result in a change in the subsurface soil and groundwater conditions at these boring locations. The lines designating the interface between soil or refusal materials on the records and on profiles represent approximate boundaries. The actual transition between materials may be gradual. The boring records are included in Appendix B.

The borings were drilled using hollow-stem augers and solid-flight augers, as noted on the Boring Logs. Penetration testing and split barrel sampling were conducted in the borings at regular intervals.

The standard penetration test (SPT) provides an indication of the soil strength and compressibility. The SPT resistances and split barrel sampling are conducted simultaneously according to ASTM Specification D1586. At regular intervals, the drilling tools are removed, and soil samples obtained with a standard split tube sampler. The sampler is first seated six inches, to penetrate any loose cuttings, then driven an additional foot with blows of a 140-pound hammer falling thirty inches. The number of hammer blows required to drive the sampler the final foot is recorded and is designated the "penetration resistance".

5.0 Subsurface Conditions

The subsurface condition of the project area was determined from 3 soil test borings. The boring locations were selected by SMA after a review of the project site and consultation with the project civil engineer. The boring locations are shown on the location map in Appendix A. From the existing site grade, the soil test borings were advanced to depths ranging from 12.0-feet to 16.5-feet.

Standard Penetration Tests were conducted in the borings at intervals in general accordance with ASTM D1586. Disturbed samples were obtained during this test and were used to classify the soils. The standard penetration resistances obtained provide a general indication of soil strength and compressibility.

The subsurface conditions encountered are shown in the boring log in Appendix B. These records represent our interpretation of the subsurface conditions based on field logs, visual examination of field samples and laboratory testing of representative field samples. The lines designating the interface between various strata on the boring logs represent the approximate interface location. In reality, the transition between strata may actually be gradual.

5.1 SOIL AND ROCK CONDITIONS

The soil profile of the test holes shows the following:

Boring 1		
Depth (feet)	Soil Description	Soil Classification
0.0–2.0	Brown Lean Clay w. Sand	CL
2.0–4.0	Brown Lean Clay w. Sand	CL
4.0–6.0	Light Brown Lean Clay w. Sand	CL
6.0–8.0	Brown Lean Clay	CL
8.0–10.0	Light Brown Sandy Lean Clay	CL
10.0–12.0	Brown Lean Clay w. Sand	CL

5.1 Soil and Rock Conditions (continued)

Boring 2		
Depth (feet)	Soil Description	Soil Classification
0.0–2.0	Brown Lean Clay w. Sand	CL
2.0–4.0	Brown Lean Clay w. Sand	CL
4.0–6.0	Light Brown Lean Clay w. Sand	CL
6.0–8.0	Brown Lean Clay	CL
8.0–10.0	Light Brown Sandy Lean Clay	CL
10.0–12.0	Brown Lean Clay w. Sand	CL

Boring 3		
Depth (feet)	Soil Description	Soil Classification
0.0–2.0	Brown Gravelly Lean Clay w. Sand	CL
2.0–4.0	Brown Lean Clay w. Sand	CL
4.0–6.0	Brown Lean Clay w. Sand	CL
6.0–8.0	Brown Lean Clay	CL
8.0–10.0	Brown Lean Clay w. Sand	CL
10.0–15.0	Light Brown Sandy Lean Clay	CL
15.0–16.5	Light Brown Lean Clay	CL

5.2 **GROUNDWATER**

Groundwater was **NOT** encountered within the borings during the field exploration on this project site.

5.3 SOIL CHEMISTRY

No laboratory tests were performed to determine the chemical properties of the surface soils within the project area, although record data was reviewed to determine the general soil properties. Soil properties were determined from soil survey information accessed on-line via the United States Department of Agriculture Web Soil Survey at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. The soil(s) found within the project location are as follows:

Soil Chemistry Summary						
Soil Type	Soil Name	Hydrologic Soil Classification	pH	Salinity (milliohm/cm)	Risk of Corrosion Untreated Steel	Risk of Corrosion Concrete
Rc	Reagan Loam (0% to 1% Slopes)	B	7.4 to 8.4	2.0 to 8.0	High	Moderate

In accordance with ASTM C150 and C150M as well as a review of soil types, Type I or Type IA cement can be used for most concrete foundations. If drainage structures are anticipated to have moderate to high sulfate concentrations, Type II cement should be used.

6.0 Discussion and Recommendations

6.1 GENERAL PROJECT CRITERIA

The primary objective of this report was to determine whether the in-situ soils located within the construction limits of the existing 8-inch gravity sewer line as satisfactory for backfill materials, trenching backfill, pipe bursting parameters and can be properly compacted to applicable standards. The proposed improvements will be implemented in such a way as to minimize the depth of the sewer line(s) while maintaining minimum requirements of slopes and velocities.

6.2 SITE DEVELOPMENT RECOMMENDATIONS

It is SMA's understanding that the Owner's intention would be to utilize native material for bedding material and backfill material, if deemed adequate. Based upon the anticipated loading SMA has prepared the following earthwork recommendations per designated use.

All fill and/or backfill materials if required and as a minimum, shall meet the requirements set forth in Section 7 of this report and shall be placed in compacted layers not to exceed 6 inches in thickness. All fill materials shall be moisture treated to a level of +/- 2 percent of optimum and compacted to 95 percent of ASTM D1557. The top layer of native material below any excavated area shall be scarified, moisture treated to a level of +/- 2 percent of optimum and compacted to 95 percent of ASTM D1557.

6.2.1 TRENCHING BACKFILL

Evaluation of trenching backfill characteristics of the on-site materials is based upon the results obtained through the three (3) borings within the project site. As such, the following table illustrates the average soil classifications, anticipated trenching performance and approximate thickness of the available materials.

Boring Number	Depth of Materials (ft)	Soil Classification	Anticipated Trenching Performance
B1	0 to 12	Medium dense lean clays and sandy clays.	Not adequate for trench backfill unless soil blended with granular material.
B2	0 to 12	Medium dense lean clays and sandy clays.	Not adequate for trench backfill unless soil blended with granular material.
B3	0 to 16.5	Medium dense lean clays and sandy clays.	Not adequate for trench backfill unless soil blended with granular material.

6.2.2 BEDDING MATERIAL

Evaluation of bedding material characteristics of the on-site materials in close proximity to the depth of the existing gravity sewer line is based upon the results obtained through the three (3) borings within the project site. Required bedding material required for the proper installation of the gravity sewer line shall at a minimum meet the requirements of the City of Carlsbad’s Public Infrastructure Specifications dated July 2019. Construction documents shall reference this document to ensure the appropriate bedding gradation requirements are met.

Boring Number	Depth of Materials (ft)	Soil Classification	Anticipated Bedding Performance
B1	0 to 12	Soft clays over medium dense clays	Not adequate for bedding materials.
B2	0 to 12	Soft clays over medium dense clays	Not adequate for bedding materials.
B3	0 to 16.5	Soft clays over medium dense clays	Not adequate for bedding materials.

6.2.3 TRENCHLESS INSTALLATION

Due to project constraints and accessibility, the Client is considering the implementation of trenchless construction, where applicable, for the replacement of the existing 8-inch gravity sewer line. As such the following table illustrates the physical soil descriptions of materials within the installation depth ranges of the existing sewer gravity line. Final determination of the probable installation success of trenchless technology shall be made by the project contractor.

Boring Number	Depth of Materials (ft)	Soil Classification	Anticipated Trenchless Installation Performance
B1	0 to 12	Soft clays over medium dense clays	Low probability of successful trenchless installation
B2	0 to 12	Soft clays over medium dense clays	Low probability of successful trenchless installation
B3	0 to 16.5	Soft clays over medium dense clays	Low probability of successful trenchless installation

7.0 Recommended Earthwork Specifications – Small Projects

7.1 GENERAL

7.1.1 Description of Work

A. This section specifies the requirements for furnishing all equipment, materials, labor, tools, and techniques for general earthwork construction including, but not limited to, the following:

1. Site preparation.
2. Excavation.
3. Underpinning.
4. Filling and backfilling.
5. Grading.
6. Soil Disposal.
7. Clean Up

7.1.2 Definitions

A. Unsuitable Materials:

1. Fills: Topsoil; frozen materials; construction materials and materials subject to decomposition; clods of clay and stones larger than 3 inches; organic material, including silts, which are unstable; and inorganic materials, including silts, too wet to be stable and any material with a liquid limit and plasticity index exceeding 40 and 15 respectively. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction, as defined by ASTM D1557.
2. Existing Subgrade (Except Footing Subgrade): Same materials as 7.1.2.A.1, that are not capable of direct support of slabs, pavement, and similar items with possible exception of improvement by compaction, proof-rolling, or similar methods.
3. Existing Subgrade (Footings Only): Same as 7.1.2.A.1, but no fill or backfill. If materials differ from design requirements, excavate to acceptable strata subject to the Geotechnical Engineer's approval.

B. Building Earthwork: Earthwork operations required in area enclosed by a line located 5 feet outside of principal building perimeter. It also includes earthwork required for auxiliary structures and buildings.

C. Trench Earthwork: Trench work required for utility lines.

D. Site Earthwork: Earthwork operations required in area outside of a line located 5 feet outside of principal building perimeter and within new construction area with exceptions noted above.

E. Degree of compaction: Degree of compaction is expressed as a percentage of maximum density obtained by laboratory test procedure. This percentage of maximum density is obtained through use of data provided from results of field test procedures presented in ASTM D1557, ASTM D2167, and ASTM D6938.

F. Fill: Satisfactory soil materials used to raise existing grades. In the project construction documents and drawings, the term "fill" means fill or backfill as appropriate.

G. Backfill: Soil materials or controlled low strength material used to fill an excavation.

H. Unauthorized excavation: Removal of materials beyond indicated sub-grade elevations or indicated lines and dimensions without written authorization by the Project Engineer.

- I. Subgrade: The undisturbed earth or the compacted soil layer immediately below granular fill.
- J. Structure: Buildings, foundations, slabs, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- K. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.
- L. Utilities include on-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

7.1.3 Applicable Publications

- A. The latest edition of the publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - D1557Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2700 kN m/m³))
 - D2167Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
 - D2487Standard Classification of Soil for Engineering Purposes (Unified Soil Classification System)
 - D6938Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

7.2 PRODUCTS

7.2.1 Materials

- A. General: Provide borrow soil material when sufficient satisfactory soil materials are not available from excavations.
- B. Fills: Material in compliance with ASTM D2487 Soil Classification Groups GW, GP, GM, SW, SP, SM, and SC, or any combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter. Material approved from on site or off site sources having a minimum dry density of 110 pcf, a maximum Plasticity Index of 15, and a maximum Liquid Limit of 40.
- C. Engineered Fill: Naturally or artificially graded mixture of compliance with ASTM D2487 Soil Classification Groups GW, GP, GM, SW, SP, SM, and SC, or any combination of these groups, or as approved by the Engineer or material with at least 90 percent passing a 1 1/2-inch sieve and not more than 35 percent passing a No. 200 sieve, per ASTM D2940.

7.3 EXECUTION

7.3.1 Site Preparation

- A. Clearing: Clear within limits of earthwork operations as shown. Work includes removal of trees, shrubs, fences, foundations, incidental structures, paving, debris, trash, and other obstructions.
- B. Grubbing: Remove stumps and roots 3 inch and larger diameter. Undisturbed sound stumps, roots up to 3-inch diameter and nonperishable solid objects a minimum of 3 feet below subgrade or the bottom of foundation, slabs and pavements.

- C. Disposal: All materials removed from the property shall be disposed of at a legally approved site, for the specific materials, and all removals shall be in accordance with all applicable Federal, State and local regulations.

7.3.2 Excavation

- A. Shoring, Sheeting and Bracing: Shore, brace, or slope, its angle of repose or to an angle considered acceptable by the Geotechnical Engineer, banks of excavations to protect workmen, banks, adjacent paving, structures and utilities.
1. Design of the temporary support of excavation system is the responsibility of the Contractor.
 2. Construction of the support of excavation system shall not interfere with the permanent structure and may begin only after a review by the Geotechnical Engineer.
 3. Extend shoring and bracing to a minimum of 5 feet below the bottom of excavation. Shore excavations that are carried below elevations of adjacent existing foundations.
 4. If bearing material of any foundation is disturbed by excavating, improper shoring or removal of existing or temporary shoring, placing of backfill, and similar operations, the Contractor shall provide a concrete footing, under disturbed foundations, as directed by Geotechnical Engineer, at no additional cost to the Owner. Do not remove shoring until permanent work in excavation has been inspected and approved by Geotechnical Engineer.
- B. Excavation Drainage: Operate pumping equipment, and/or provide other materials, means and equipment as required to keep excavation free of water and subgrade dry, firm, and undisturbed until approval of permanent work has been received from Geotechnical Engineer. If the excavation becomes saturated, approval by the Geotechnical Engineer is also required before placement of the permanent work on all subgrades.
- C. Subgrade Protection: Protect subgrades from softening, undermining, washout, or damage by rain or water accumulation. Reroute surface water runoff from excavated areas and not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches. When subgrade for foundations has been disturbed by water, remove disturbed material to firm undisturbed material after water is brought under control. Replace disturbed subgrade in trenches with concrete or material approved by the Geotechnical Engineer.
- D. Building Earthwork:
1. Excavation shall be accomplished as required by drawings and specifications.
 2. Excavate foundation excavations to solid undisturbed subgrade.
 3. Remove loose or soft materials to a solid bottom.
 4. Fill excess cut under footings or foundations with properly compacted engineered fill.
 5. Do not tamp earth for backfilling in footing bottoms, except as specified.
 6. Slope grades to direct water away from excavations and to prevent ponding.
- E. Trench Earthwork:
1. Utility trenches:
 - a. Excavate to a width as necessary for sheeting and bracing and proper performance of the work.
 - b. Grade bottom of trenches with bell holes scooped out to provide a uniform bearing.
 - c. Support piping on undisturbed earth unless a mechanical support is shown.

F. Site Earthwork: Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities and other items indicated to be removed; together with soil, boulders and other materials not classified as rock or unauthorized excavation. Excavation shall be accomplished as required by the project drawings and specifications. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, complying with OSHA requirements and for inspections. Remove subgrade materials that are determined as unsuitable by this specification and replace with acceptable material. If there is a question as to whether material is unsuitable or not, the Geotechnical Engineer shall obtain samples of the material and determine the soil classification for each sample to determine whether it is unsuitable or not.

1. Site Grading:

- a. Provide a smooth transition between adjacent existing grades and new grades.
- b. Cut out soft spots, fill low spots and trim high spots to comply with required surface tolerances.
- c. Slope grades to direct water away from buildings and to prevent ponds from forming where not designed.

7.3.3 Filling and Backfilling

A. General: Do not fill or backfill until all debris, water, unsatisfactory soil materials, obstructions and deleterious materials have been removed from excavation. For fill and backfill, use excavated materials and borrow meeting the criteria specified herein, as applicable. Do not use unsuitable excavated materials. Do not backfill until foundation walls have been completed above grade and adequately braced, waterproofing or damp-proofing applied, foundation drainage and pipes coming in contact with backfill have been installed and work inspected and approved by the Geotechnical Engineer.

B. Placing: Place materials in horizontal layers not exceeding 6 inches in compacted depth for material compacted by heavy compaction equipment, and not more than 4 inches in compacted depth for material compacted by hand-operated tampers and then compacted. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure. Place no material on surfaces that are muddy, frozen or contain frost.

C. Compaction: Compact with approved tamping rollers, sheepsfoot rollers, pneumatic tired rollers, steel wheeled rollers, vibrator compactors or other approved equipment (hand or mechanized) well suited to soil being compacted. Do not operate mechanized vibratory compaction equipment within 10 feet of new or existing building walls without prior approval of Geotechnical Engineer. Moisten or aerate material as necessary to provide moisture content that will readily facilitate obtaining specified compaction with equipment used. Compact soil to not less than the following percentages of maximum dry density, according ASTM D1557 as specified below:

1. Fills, Embankments, and Backfill

- a. Under proposed structures, building slabs, steps and paved areas, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill material in to 95 percent.
- b. Landscaped areas to 90 percent.

2. Natural Ground (Cut or Existing)
 - a. Under building slabs, steps and paved areas, top 6 inches of compacted material to 95 percent.
- D. Construction Material Testing
 1. Proctor Testing
 - a. A Proctor Test shall be completed in accordance with ASTM D1557 standards to determine applicable moisture to density relationship per each soil type located within the project area.
 2. Density Testing Frequency
 - a. Soils located directly under building foundation systems and/or retaining wall systems shall have one proctor test performed every 150-linear foot of foundation per lift.
 - b. Soils located directly under building pads shall have one proctor test performed every 5000 Ft² per lift.
 - c. Soils not located under building pads shall be tested every 10,000 ft² per lift.

7.3.4 Grading

- A. General: Uniformly grade the areas within the limits of this section, including adjacent transition areas. Smooth the finished surface within specified tolerance. Provide uniform levels or slopes between points where elevations are indicated, or between such points and existing finished grades. Provide a smooth transition between abrupt changes in slope.
- B. Cut rough or sloping rock to level beds for foundations. In pipe spaces or other unfinished areas, fill low spots and level off with SM, SM-SP, or SP.
- C. Slope backfill outside building away from building walls for a minimum distance of 5 feet.
- D. Finished grade shall be at least 6 inches below bottom line of window or other building wall openings unless greater depth is identified on architectural drawings.
- E. Finish subgrade in a condition acceptable to Project Engineer at least one day in advance of paving operations. Maintain finished subgrade in a smooth and compacted condition until succeeding operation has been accomplished. Scarify, compact, and grade subgrade prior to further construction when approved compacted subgrade is disturbed by Contractor's subsequent operations or adverse weather.
- H. Grading for Paved Areas: Provide final grades for both subgrade and base course to +/- 0.25 inches of indicated grades.

7.3.5 Disposal of Unsuitable and Excess Excavated Material

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off of the project site.
- B. Place excess excavated materials suitable for fill and/or backfill on site where directed.
- C. Remove from site and dispose of any excess excavated materials after all fill and backfill operations have been completed.

7.3.6 Clean Up

Upon completion of earthwork operations, clean areas within contract limits, remove tools, and equipment. Provide site clear, clean, free of debris and suitable for subsequent construction operations. Remove all debris, rubbish, and excess material from the project site.

8.0 Limitations

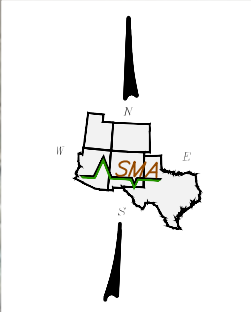
SMA prepared this report for the specific project and location aforementioned in Section 1 and Section 3. SMA conducted this study using the standard level of care and diligence normally practiced by recognized engineering firms now performing services of a similar nature under similar circumstances. This report, including all illustrations, is intended to be used in its entirety.

This report describes SMA's findings and conclusions about subsurface conditions at the locations identified and has based interpretation of the soil and groundwater conditions on data obtained from the borings drilled for this study. Although SMA has allowed for minor variations in subsurface conditions, recommendations may not be appropriate if soil conditions change or are found to significantly vary (as a result of localized geologic conditions) from those encountered during site evaluation. SMA recommends informing and retaining SMA if unanticipated soil conditions are encountered during construction and, if necessary, revise these conclusions.

SMA prepared this report for the exclusive use of the Client and Structural Engineer. The purpose is to evaluate the design of the project as it relates to SMA's interpretation of the geotechnical aspects discussed here. ***This report should be available to potential contractors for information only and not as a warranty of subsurface conditions.***

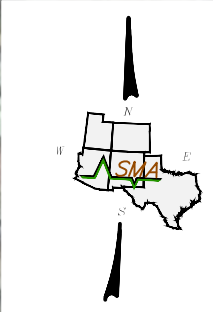
Appendix A

Project Vicinity Map & Bore Locations




SOUDER, MILLER & ASSOCIATES
 3500 Sedona Hills Parkway Las Cruces, NM 88011
 Phone (575) 647-0799 Toll Free (800) 647-0799 Fax (575) 647-0680

VICINITY MAP		
Designed SVG	Drawn DIF	Checked PJP
Date: 05/17/2021		
Scale: 1"=1000'		
Project No: 6E29911		
V-1		



SOUDER, MILLER & ASSOCIATES
 3500 Sedona Hills Parkway Las Cruces, NM 88011
 Phone (575) 647-0799 Toll Free (800) 647-0799 Fax (575) 647-0680

BORE LOCATION MAP
EAST ROSE STREET SEWER IMPROVEMENT
CARLSBAD, NEW MEXICO

Designed SVG	Drawn DIF	Checked PJP
Date: 05/17/2021		
Scale: 1"=250'		
Project No: 6E29911		
BOR-1		

Appendix B
Soil Boring Logs



GEOTECHNICAL BORING LOG

Project Name Dexter Water
 Project Number 40039
 Client Souder, Miller & Associates

Date of Field Operations 22-Apr-21
 Laboratory Number B1

Depth, ft	Graphic Log	Sample	Sample Type	Standard Penetration Blows per Foot	Liquid Limit	Plasticity Index	Moisture Content, %	Unified Soil Classification	Visual Classification & Description
				5.3.2					
0			S	5	39	27	12.6	CL	Brown lean clay with sand
1				2.6.9					
2			S	15	30	17	13.3	CL	Brown lean clay with sand
3				5.8.9					
4			S	17	39	23	11.2	CL	Light brown lean clay with sand
5				9.12.18					
6			S	30	33	18	9.8	CL	Brown lean clay
7				13.16.17					
8			S	33	43	27	12.6	CL	Light brown sandy lean clay
9				11.20.16					
10			S	36	39	23	12.7	CL	Brown lean clay with sand
11									
12									

Sample Type
 D - Disturbed
 S - Standard Penetration
 U - Thin Wall Shelby Tube

Water Table
 Water Table at __ Below Existing Site Grade



GEOTECHNICAL BORING LOG

Project Name Dexter Water
 Project Number 40039
 Client Souder, Miller & Associates

Date of Field Operations 22-Apr-21
 Laboratory Number B2

Depth, ft	Graphic Log	Sample	Sample Type	Standard Penetration Blows per Foot	Liquid Limit	Plasticity Index	Moisture Content, %	Unified Soil Classification	Visual Classification & Description
				5.3.3					
0			S	6	31	13	11.7	CL	Brown lean clay with sand
1				2.5.9					
2			S	14	36	16	15.7	CL	Brown lean clay with sand
3				4.7.7					
4			S	14	36	23	15.0	CL	Light brown lean clay with sand
5				5.8.12					
6			S	20	39	18	14.8	CL	Brown lean clay
7				7.9.15					
8			S	24	37	21	12.6	CL	Light brown sandy lean clay
9				8.16.14					
10			S	30	35	26	11.4	CL	Brown lean clay with sand
11									
12									

Sample Type
 D - Disturbed
 S - Standard Penetration
 U - Thin Wall Shelby Tube

Water Table
 Water Table at ___ Below Existing Site Grade



GEOTECHNICAL BORING LOG

Project Name Dexter Water
 Project Number 40039
 Client Souder, Miller & Associates

Date of Field Operations 22-Apr-21
 Laboratory Number B3

Depth, ft	Graphic Log	Sample	Sample Type	Standard Penetration Blows per Foot	Liquid Limit	Plasticity Index	Moisture Content, %	Unified Soil Classification	Visual Classification & Description
				23.8.5					
0			S	13	24	16	5.1	CL	Brown gravelly lean clay with sand
1				3.18.10					
2			S	28	26	8	9.0	CL	Brown lena clay with sand
3					6.5.8				
4			S	13	45	34	10.5	CL	Brown lean clay with sand
5					7.8.11				
6			S	19	38	26	14.7	CL	Brown lean clay
7					5.8.11				
8			S	19	34	21	13.4	CL	Brown lean clay with sand
9					6.9.11				
10			S	20	32	18	9.3	CL	Light brown sandy lean clay
11									
12									
13									
14					14.37.33				
15			S	50+	44	28	12.6	CL	Light brown lean clay
16.5									

Sample Type
 D - Disturbed
 S - Standard Penetration
 U - Thin Wall Shelby Tube

Water Table
 Water Table at Below Existing Site Grade

Appendix C
Laboratory Analysis

APPENDIX C - LABORATORY ANALYSIS

SAMPLE HANDLING

After recovery, our engineering staff removed the soil samples from the samplers in field. They examined the samples, visually classified them, and preserved representative portions of each sample for laboratory testing. They also obtained strength estimates of most cohesive samples in the field using a calibrated hand penetrometer or a Torvane.

SOIL CLASSIFICATION

Soil Classifications provide a general guide to the engineering properties of various soil types. Representative samples obtained during drilling operations are examined in our laboratory and visually classified by an engineer. The soils are classified according to consistency (based on number of blows from standard penetration tests), color and texture. These classification descriptions are included on our Test Boring Records.

The classification system discussed above is primarily qualitative and for detailed soil classification two laboratory tests are necessary: grain size tests and index tests. Using these test results the soil can be classified according to the AASHTO, FAA, or Unified Classification Systems (ASTM D2487). These soil classifications and the in-place physical soil properties provide an index for estimating the behavior of the soil.

GRAIN SIZE TESTS

Grain size tests are performed to determine the distribution of particle sizes. The soil samples are prepared for testing according to ASTM D421 (dry preparation) or ASTM D2217 (wet preparation). The grain size distribution of soils coarser than a number 200 sieve (0.074 mm opening) is determined by passing the samples through a standard set of nested sieves. Usually, these are sandy or gravelly soils. Materials passing the No. 200 sieve are the percent fines (silt and clay sizes). Using a hydrometer, these particles are suspended in water and the particle size distribution calculated from the measured settlement rate.

INDEX TESTING

Index tests are performed to determine the soil classification and plasticity characteristics. Generally, index tests are conducted on clayey and silty soils. The soil plasticity characteristics are defined by the Plastic Limit (PL) and the Liquid Limit (LL). The PL and LL are determined in accordance with ASTM D4318 and are referred to as the Atterberg Limits.



PHYSICAL SOIL PROPERTIES

The in-place physical properties are described by the specific gravity, wet unit weight, moisture content, dry unit weight, void ratio, and percent saturation of the soil. The specific gravity and moisture content are determined according to ASTM D854 and D2216, respectively. The wet unit weight is found by obtaining a known volume of the soil and dividing the wet sample weight by the known volume. The dry unit weight, void ratio and percent saturation are calculated values.





TABULATION OF LABORATORY LAB RESULTS

PROJECT: E. Rose Street Sewer Improvements

PROJECT#: 40040

CLIENT: Souder, Miller & Associates

22-Apr-21

LOCATION	Depth (feet)	Moisture (%)	Sieve Analysis - Accumulative Passing										Plasticity Index	Liquid Limit	ASTM	
			2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#80				#200
Test Hole B1	0.0 - 2.0	12.6					100	99	98	96	94	80	80	27	39	CL
	2.0 - 4.0	13.3							100	97	97	95	85.1	17	30	CL
	4.0 - 6.0	11.2				100	92	92	91	90	89	86	78.9	23	39	CL
	6.0 - 8.0	9.8						100	98	96	95	92	87.6	18	33	CL
	8.0 - 10.0	12.6				100	98	95	91	88	85	78	67.4	27	43	CL
	10.0 - 12.0	12.7						100	99	97	94	91	84.1	23	39	CL
LOCATION	Depth (feet)	Moisture (%)	Sieve Analysis - Accumulative Passing										Plasticity Index	Liquid Limit	ASTM	
			2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#80				#200
Test Hole B2	0.0 - 2.0	11.7						100	89	82	75	73	62.5	13	31	CL
	2.0 - 4.0	15.7								100	98	97	86.3	16	36	CL
	4.0 - 6.0	15							100	99	99	97	90.8	23	36	CL
	6.0 - 8.0	14.8							100	99	99	97	86.4	18	39	CL
	8.0 - 10.0	12.6						100	98	97	94	87	73.1	21	37	CL
	10.0 - 12.0	11.4			100	93	90	89	86	83	82	75	63.4	35	26	CL
LOCATION	Depth (feet)	Moisture (%)	Sieve Analysis - Accumulative Passing										Plasticity Index	Liquid Limit	ASTM	
			2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#80				#200
Test Hole B3	0.0 - 2.0	5.1			100	85	85	81	72	66	59	59	47.1	16	24	CL
	2.0 - 4.0	9					100	97	96	95	92	89	78.8	8	26	CL
	4.0 - 6.0	10.5						100	99	98	96	92	83.1	34	45	CL
	6.0 - 8.0	14.7								100	99	98	90.2	26	38	CL
	8.0 - 10.0	13.4					100	97	96	95	94	85	76.9	21	34	CL
	10.0 - 15.0	9.3			100	90	90	90	89	88	84	78	59.3	18	32	CL
	15.0 - 16.5	12.6							100	99	99	98	95	87.9	28	44

Appendix D

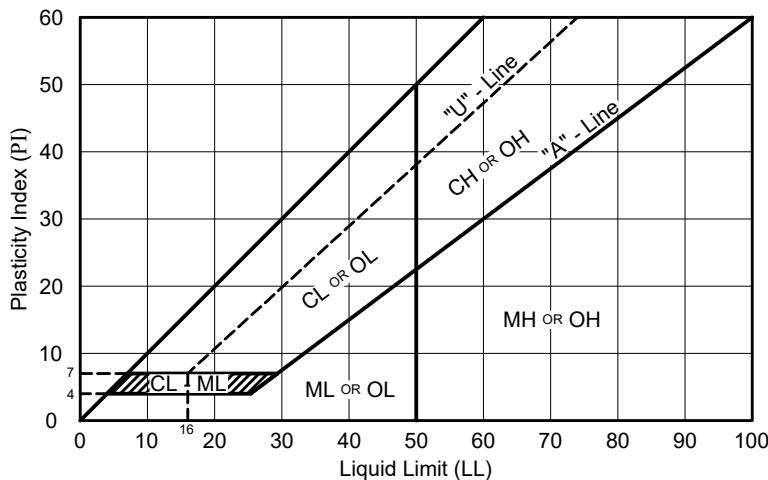
USCS Soil Classification System

Soils are visually classified by the Unified Soil Classification system on the boring logs presented in this report. Grain-size analysis and Atterberg Limits Test are often performed on selected samples to aid in classification. The classification system is briefly outlined on this chart. For more detailed description of the system, see "The Unified Soil Classification System", Corp of Engineers, US Army Technical Memorandum No.3-357 (revised April 1960) or ASTM Designation: D2487-66T.

MAJOR DIVISIONS				GRAPHIC SYMBOL	GROUP SYMBOL	TYPICAL NAMES
COARSE-GRAINED SOILS (Less than 50% passes No. 200 sieve)	GRAVELS (50% or less of coarse fraction passes No. 4 sieve)	CLEAN GRAVELS (Less than 5% passes No. 200 sieve)			GW	Well-graded gravels, gravel-sand mixtures, little or no fines
					GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES (More than 12% passes No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		GM	Silty gravels, gravel-sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (more than 50% of coarse fraction passes No. 4 sieve)	CLEAN SANDS (Less than 5% passes No. 200 sieve)			SW	Well-graded sands, gravelly sands, little or no fines
					SP	Poorly-graded sands, gravelly sands, little or no fines
		SANDS WITH FINES (More than 12% passes No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		SM	Silty sands, sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more passes No. 200 sieve)	SILTS (Limits Plot Below "A" Line & hatched zone on plasticity chart)	SILTS OF LOW PLASTICITY (Liquid Limit Less Than 50%)			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity
		SILTS OF HIGH PLASTICITY (Liquid Limit More Than 50%)			MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CLAYS (Limits Plot Above "A" Line & hatched zone on plasticity chart)	CLAYS OF LOW PLASTICITY (Liquid Limit Less Than 50%)			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		CLAYS OF HIGH PLASTICITY (Liquid Limit More Than 50%)			CH	Inorganic clays of high plasticity, fat clays

NOTE: Coarse grained soils with between 5% and 12% passing the No. 200 sieve and fine grained soils with limits plotting in the hatched zone on the plasticity chart to have double symbol.

PLASTICITY CHART



DEFINITIONS OF SOIL FRACTIONS

SOIL COMPONENT	PARTICLE SIZE RANGE
Cobbles Above 3 Inches	
Gravel 3 In. to No. 4 Sieve Coarse Gravel Fine Gravel	3 In. to 3/4 In. 3/4 In. to No. 4 Sieve
Sand Coarse Medium Fine	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200
Fines (Silt or Clay)	Below No. 200 Sieve



Souder, Miller & Associates

3500 Sedona Hills Parkway
Las Cruces, NM 88011

Phone (575) 647-0799 Toll Free (800) 647-0799 Fax (575) 647-0680

SMA

UNIFIED SOIL
CLASSIFICATION SYSTEM

Designed PJP	Drawn AD	Checked PJP
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Date: Jan 2018

Scale: Horiz: N/A
Vert: N/A

Project No:

SC-1

Appendix E

Correlation of Penetration Resistance With Relative Density and Consistency

APPENDIX E

CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

(Table 5.3 from *Foundation Engineering, 2ND Edition*, by Peck, Hanson, Thornburn)

	NO. OF BLOWS, N	RELATIVE DENSITY
Sands:	0 - 4	Very Loose
	5 - 10	Loose
	11 - 30	Firm
	31 - 50	Dense
	Over 50	Very Dense
		CONSISTENCY
Silts & Clays:	0 - 2	Very Soft
	3 - 4	Soft
	5 - 8	Firm
	9 - 15	Stiff
	16 - 30	Very Stiff
	31 - 50	Hard
Over 50	Very Hard	

PARTICAL SIZE IDENTIFICATION:

(ASTM D2487)

Boulders:	Greater than 300 mm
Cobbles:	75 mm to 300 mm
Gravel:	
Coarse -	19 mm to 75 mm
Fine -	4.75 mm to 19 mm
Sands:	
Coarse -	2 mm to 4.75 mm
Medium -	0.425 mm to 2 mm
Fine -	0.075 mm to 0.425 mm
Silts & Clays:	Less than 0.075 mm



SUPPLEMENTAL TECHNICAL SPECIFICATIONS

SECTION 01 00 00
BASIC REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Summary:
 - 1.2: Contract description.
 - 1.3: Special considerations.
 - 1.4: Work by Owner.
 - 1.5: Contractor's use of premises.
 - 1.6: Specification conventions.
 - 1.7: Minimum wage rate determination.

- B. Price and Payment Procedures:
 - 1.8: Testing and inspection allowances.
 - 1.9: Schedule of values.
 - 1.10: Applications for payment.
 - 1.11: Change procedures.
 - 1.12: Unit prices.
 - 1.13: Alternates.

- C. Administrative Requirements:
 - 1.14: Coordination.
 - 1.15: Suspension of Work.
 - 1.16: Field engineering.
 - 1.17: Pre-Construction Conference.
 - 1.18: Progress meetings.
 - 1.19: Cutting and patching.

- D. Submittals:
 - 1.20: Submittal procedures.
 - 1.21: Construction progress schedules.
 - 1.22: Proposed products list.
 - 1.23: Product data.
 - 1.24: Shop drawings.
 - 1.25: Test reports.
 - 1.26: Manufacturer's instructions and certificates.

- E. Quality Requirements:
 - 1.27: Quality control.
 - 1.28: Tolerances.
 - 1.29: References.
 - 1.30: Manufacturer's field services and reports.
 - 1.31: Examination.

- F. Temporary Facilities and Controls:
 - 1.32: Temporary services.
 - 1.33: Access roads.
 - 1.34: Progress cleaning and waste removal.
 - 1.35: Project identification.
 - 1.36: Barriers and fencing.
 - 1.37: Protection of installed work.
 - 1.38: Security.
 - 1.39: Water control.
 - 1.40: Pollution and environmental control.
 - 1.41: Removal of utilities, facilities, and controls.

- G. Product Requirements:
 - 1.42: Products.
 - 1.43: Delivery, handling, storage, and protection.
 - 1.44: Substitutions.

- H. Execution Requirements:
 - 1.45: Closeout procedures.
 - 1.46: Final cleaning.
 - 1.47: Starting of systems.
 - 1.48: Demonstration and instructions.
 - 1.49: Testing, adjusting and balancing.
 - 1.50: Protecting installed construction.
 - 1.51: Project record documents.
 - 1.52: Operation and maintenance data.
 - 1.53: Spare parts and maintenance materials.
 - 1.54: Warranties and product registration.

1.2 CONTRACT DESCRIPTION

- A. Work of the Project includes:
 - 1. installation of 1,457 linear feet of 8-inch force main and associated appurtenances, including rehabilitation of existing manholes and pavement patch.

- B. Perform Work of Contract under a stipulated price basis with Owner in accordance with Conditions of Contract.

1.3 SPECIAL CONSIDERATIONS

- A. All construction shall be performed in accordance with:
 - 1. Project Construction Plans
 - 2. City of Carlsbad Infrastructure Specifications, current edition
 - 3. Project Supplemental Specifications
 - 4. New Mexico Standard Specifications for Public Works Construction, current edition.
 - 5. NMDOT Specifications, current edition.
 - 6. In the case of conflicting specifications, the City of Carlsbad will determine which specification governs.

- B. Contractor is responsible for performing all testing required in accordance with City of Carlsbad Infrastructure Specifications.
- C. Contractor is responsible for restoring the site to original or better condition at the Contractor's expense. Site restoration including temporary erosion control provisions is a prerequisite for periodic and final payment.
- D. The City of Carlsbad has indicated that water used for construction will be made available at no additional cost to the Contractor, however it must be metered and monitored.
- E. Prior to beginning construction activities, the Contractor must furnish full-coverage video documentation of the entire construction site, per SC-2.05.B of the EJCDC C-800 Supplementary Conditions. The video must include coverage of all areas and adjacent features that may potentially be impacted by the impending construction work. Contractor must submit two (2) copies of the video documentation on DVD format as part of the submittal process. This shall be considered incidental to the project and no additional payment will be made therefor.
- F. Contractor shall prepare record drawing information under the direction of a Licensed Professional Surveyor. Refer to Article 1.51 Project Record Documents below and General Notes on the Drawings for specific requirements related to As-Built Drawings.
- G. Contractor shall coordinate with Owner for tie-in to existing infrastructure. Contractor shall notify Engineer prior to performing the respective activities.
- H. Contractor must maintain a full set of Drawings and Technical Specifications at the construction site at all times throughout the construction process. All subcontractors must possess at least all Drawings and Technical Specifications pertaining to their portion of the work while on the construction site at all times.
- I. Contractor shall be responsible for notifying residents of construction. Access to driveways must be maintained at all times.
- J. Construction work will generally not be permitted on the following Federal-recognized holidays: New Year's Day, Martin Luther King, Jr.'s Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. When any of the above holidays fall on a Saturday and the preceding Friday is established as a holiday for Government employees, or when any of the above holidays fall on a Sunday and the Monday following that day is established as a holiday for Government employees, no construction will be permitted on those days. However, the Owner, when in his/her opinion it is justified, may grant the Contractor permission to work on any of the above days upon advance written request by the Contractor.
- K. Contractor shall confine operations to the construction site. Contractor shall be responsible for obtaining permission for any activity outside of the established and approved construction areas.

- L. Contractor shall propose and get approval from Owner of an area to store construction debris including unsuitable material from site grading and/or excavation where it will not be a nuisance. All debris shall be contained in such a manner that will prevent scattering. All debris, including trees and undergrowth, shall be disposed of properly within a properly permitted landfill. All debris shall be removed from the site prior to substantial completion. The handling, storage, and disposal of debris is incidental to the project.
- M. Contractor is responsible for making arrangements with the City of Carlsbad for an acceptable temporary storage area to store equipment and materials for the Project.
- N. Contractor shall implement the necessary site erosion control devices for inhibiting dust, wind, and air sediment movement offsite throughout construction in accordance with NPDES Best Management Practices and in accordance with the project SWPPP, if applicable.
- O. Contractor shall protect installed work and backfill all trenches at the completion of each day. No trenches or open excavations shall be left open overnight or at the end of the work period unless Contractor receives written approval from the Owner or Engineer. Contractor shall submit detailed procedure and necessary traffic control for protection of open trenches and/or excavations that it intends to leave open overnight.

1.4 WORK BY OWNER

- A. Not Applicable.

1.5 CONTRACTOR'S USE OF PREMISES

- A. No work shall be done before 7:00 A.M. or after 7:00 P.M., local time on a working day, on Sundays, or on legal holidays, except as necessary for the proper care and protection of work already performed, or during emergencies. For work on Saturdays, Contractor must request permission from the Engineer at least a week in advance.
- B. The Contractor shall make every effort to minimize noise caused by his operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise.
- C. The Contractor shall restrict his operations as nearly as possible to the immediate site. Unnecessary cutting of vegetation adjacent to the site is prohibited. Every effort shall be made to minimize erosion during and after construction and the site shall be returned to its original condition, except where improvements are indicated or required.
- D. The Contractor shall take affirmative action to prevent the misuse of the natural environment, wasting of natural resources, or destruction of natural values.
- E. The Contractor shall conform to all requirements set forth in the latest edition of the New Mexico Standard Specifications for Public Works Construction with latest revision, and Occupational Safety and Health Administration Regulations for trenching, shoring and excavation, and all other activities where such regulations apply. The Contractor and all

subcontractors shall conduct all activities in conformance with federal and state laws and regulations relating to occupational health and safety. Authorized inspectors from NMED’s Occupational Health and Safety Bureau shall have unobstructed access to project sites and shall not be impeded in any way from performance of their duties.

- F. The Contractor shall perform work in accordance with the latest edition of the City of Carlsbad Infrastructure Specifications.

1.6 SPECIFICATION CONVENTIONS

- A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.
- B. The Contractor shall furnish all materials, labor, plant and equipment necessary to complete the contract work as called for by the Technical Specifications and as indicated on the Drawings. Material and work, either expressed or implied, necessary for the satisfactory completion of the contract work shall be considered an integral part thereof.
- C. All standards incorporated herein by reference shall be the latest edition, unless otherwise specified. The abbreviations and applicable standards are described below:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AIA	American Institute of Architects
ANSI	American National Standards Institute, Inc.
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
CID	Construction Industries Division of the NM Regulation and Licensing Department
EJCDC	Engineers Joint Contract Documents Committee
EPA	Environmental Protection Agency
IBC	International Building Code
ISO	International Organization for Standardization
MSJC	Masonry Standards Joint Committee
NACE	National Association of Corrosion Engineers
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Department of Environment
NMSSPWC	New Mexico Standard Specifications for Public Works Construction
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration
SAE	Society of Automotive Engineers
SSPC	Steel Structure Painting Council
UL	Underwriters Laboratories, Inc.

1.7 MINIMUM WAGE RATE DETERMINATION

- A. Article 13-4-11, NMSA, 1978, requires that prevailing local wages be determined by labor category, and that this prevailing wage be the minimum acceptable pay rate. The Public Works Minimum Wage Act covers all public works construction, alteration, demolition, or repair projects when the project cost is \$60,000 or more, and when the state or any political subdivision is a party. The wage rate determination provided by the New Mexico Department of Workforce Solutions for the present project can be found in an appendix to the Contract Documents.

1.8 TESTING AND INSPECTION ALLOWANCES

- A. Testing Allowance: The bid schedule includes a predetermined sum to cover the cost of testing and inspection services as required in the Contract Documents.
- B. Contractor shall submit details regarding the proposed testing laboratory or inspection firm, including a statement of qualifications and a proposed schedule of unit price costs and estimated total cost for testing and inspection to be completed under the allowance. Any additional costs, such as travel time, shall also be detailed for this project on a unit price basis and as part of the estimated total cost of testing and inspection. Engineer may require the Contractor to solicit additional quotes if the proposed costs are not competitive.
- C. Costs Included in Allowance: Cost of engaging testing or inspection firm, execution of tests or inspection, and reporting of results.
- D. Costs Not Included in Allowance:
 - 1. Incidental labor and facilities required to assist testing or inspection firm.
 - 2. Cost of disinfection of waterlines, if applicable.
 - 3. Costs of hydrostatic pressure testing or testing of material welds as called for in the Contract Documents.
 - 4. Costs of failed tests.
- E. Costs will be drawn from testing allowance and paid based on invoice(s) submitted to Contractor by testing or inspection firm(s), and reimbursed at cost, with no markup by Contractor. Contractor shall submit appropriate NTTC form to testing firm to assure tax is not included on invoices.

1.9 SCHEDULE OF VALUES

- A. Submit schedule of values on the Construction Progress sheet within the Application for Payment forms provided in the Construction Contract Documents, or on other form acceptable to the Engineer. Contractor's standard form or electronic media printout will be considered.
- B. Base structure of Schedule of Values on Bid Schedule with identical item numbering, quantities, and values.
- C. Submit Schedule of Values in duplicate at least 15 days prior to first Progress Meeting.

1.10 APPLICATIONS FOR PAYMENT

- A. Application for Payment is synonymous with Partial Payment Estimate.
- B. Submit one [1] copy of each application on the Partial Payment Estimate form provided in the Contract Documents, together with updated Schedule of Values identifying fully the list of items in the Application for Payment.

1.11 CHANGE PROCEDURES

- A. All Change Orders shall be prepared on the form provided in these Contract Documents.
- B. Unit Price Change Order: For pre-determined unit prices and quantities, Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of work not pre-determined, refer to Article 12 - Change of Contract Price; Change of Contract Times, of the Standard General Conditions (EJCDC C-700 Standard General Conditions of the Construction Contract).

1.12 UNIT PRICES

- A. Engineer will take measurements and compute quantities accordingly. The Contractor will assist in taking of measurements and determination of work completed prior to preparation of corresponding Application for Payment.

1.13 ALTERNATES

- A. Not applicable.

1.14 COORDINATION

- A. Obtain any required business license(s) required by Owner or agency(ies) with jurisdiction prior to commencing construction activities.
- B. Coordinate scheduling, submittals, and Work of various sections of specifications to ensure efficient and orderly sequence of installation of interdependent construction elements.
- C. Verify utility requirement characteristics of operating equipment are compatible with building utilities.
- D. Submit a Traffic Control Plan that is signed and sealed by a Professional Engineer in the state of project location prior to construction activities.
 - 1. All existing signs, markers, delineators, etc. within the construction limits shall be removed, stored, and reset.
 - 2. Subject to the established Traffic Control Plan, at least one lane shall be open to traffic at all times. Provide proper signage to maintain the traffic lane in such a manner as to assure proper safety to the traveling public on all affected roads. Provide access to all private and public property at all times except when grading, excavation and backfill operations are being conducted immediately in front of the property, in which case access will not be denied for more than 4 hours without approval from the Engineer.
 - 3. Traffic lanes provided during construction shall be maintained in such a condition under all weather conditions, so as to permit the reasonable passage of passenger vehicles, and shall be kept graded and smooth and watered several times daily, as needed, to control dust.
- E. Obtain all applicable permits from the NMDOT before boring under any roadways or working along or across NMDOT rights-of-way, unless the permits have already been

obtained by the Engineer. The Contractor is also responsible for obtaining all applicable local, county and state building and development permits not previously obtained by Engineer or Owner. This includes permits from the Construction Industries Division of the Regulation and Licensing Department of the State of New Mexico, and any other regulatory agency having jurisdiction.

- F. Contractor is responsible for timely scheduling of any pertinent inspections with local, county and state agencies with jurisdiction, and as required by the permits.
- G. Coordinate space requirements and installation of mechanical and electrical work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable.
- H. All notices, demands, requests, instructions, approvals, proposals and claims must be in writing.
 - 1. Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the office of the Contractor stated on the signature page of the Agreement.
 - 2. All papers required to be delivered to the Owner shall, unless otherwise specified in writing to the Contractor, be delivered to the Owner at the address stated on the signature page of the Agreement.
 - 3. Any such notice shall be deemed to have been given as of the time of actual delivery, in the case of mailing, when the same should have been received in due course of post, or in the case of telegrams, certified mail, or telephone facsimiles, at the time of actual receipt as the case may be.

1.15 SUSPENSION OF WORK

- A. The Owner may order suspension of work due to seasonal or other conditions unsuitable for construction work.
- B. Maintenance during suspension: Prior to suspension for any cause, the Contractor shall take necessary precautions to protect the work during the period of suspension from any factors which would contribute to its deterioration.
- C. Time elapsed during suspension of the work shall not count as contract time. The Contractor shall make no claim for damages due to delay, additional mobilization charges, nor any additional costs that may be incurred solely due to suspension of work.
- D. Requests for additional time to be added after the “contract completion date” due to delays or extra work shall be made to the Owner in writing by the Contractor within ten (10) days after the time of the occurrence of the delay or receipt of a Change Order for extra work. Such requests shall set forth the justification for the additional time.
- E. Upon approval, the additional contract time shall then be in full force and effect, the same as though it were the original date for completion, and will be shown as the completion date plus an amount of additional working days. Any time required to complete the work beyond the contract time or additional contract time will result in the assessment of liquidated damages, as specified in the Contract Documents. Failure to make such requests

within the above limits will be considered as a waiver on the part of the Contractor as to the need for additional contract time.

1.16 FIELD ENGINEERING

- A. Establish elevations, lines, and levels and certify and confirm elevations and locations of the Work, conforming with the Contract Documents, with the Engineer prior to performing any excavation.
- B. Verify field measurements are as indicated on shop drawings or as instructed by manufacturer.
- C. From the information provided by the Owner, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, easement alignments, stakes for pipe locations and other working points, lines, elevations and cut sheets.

1.17 PRE-CONSTRUCTION CONFERENCE

- A. Engineer will schedule Pre-Construction Conference after Notice of Award for affected parties.
- B. The Contractor, or his duly authorized representative, and subcontractor representatives will attend the meeting.

1.18 PROGRESS MEETINGS

- A. Schedule in coordination with the Engineer at maximum bi-weekly intervals, and attend all Progress Meetings throughout progress of the Work.
- B. The purpose of the meetings will be to review the following:
 - 1. Work progress since previous meetings.
 - 2. Field observations, problems, conflicts.
 - 3. Problems which impede construction schedule.
 - 4. Corrective measures and procedures to regain projected schedule.
 - 5. Revisions to construction schedule.
 - 6. Plan progress and schedule during succeeding work period.
 - 7. Coordination of schedules.
 - 8. Off-site fabrication and delivery schedules.
 - 9. Maintenance of quality standards.
 - 10. Proposed changes, construction schedule and completion date.
 - 11. Coordination of separate contracts.
 - 12. Record or "as-built" drawings of completed work.
 - 13. Other business as required.
 - 14. Regulatory requirements including OSHA, New Mexico Board of Labor, and others as applicable.
 - 15. Funding requirements as applicable.

- C. During each meeting, the Contractor is required to present any issues which may impact his Work, with a plan to resolve these issues expeditiously.
- D. Together with each payment application, Contractor must present the current as-built drawings reflecting all work performed to date.

1.19 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching new Work; restore Work with new Products.
- B. Execute cutting, fitting, and patching, including excavation and fill, to complete Work, and to:
 - 1. Uncover Work to install or correct ill-timed Work.
 - 2. Remove and replace defective and non-conforming Work.
 - 3. Remove samples of installed Work for testing.
 - 4. Provide openings in elements of Work for penetration of mechanical and electrical Work.
- C. Cut masonry and concrete materials using masonry saw or core drill. Restore Work with new Products in accordance with requirements of Contract Documents.
- D. Fit Work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- E. Refinish surfaces to match adjacent finishes.

1.20 SUBMITTAL PROCEDURES

- A. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.
- B. Apply Contractor's stamp, signed or initialed, certifying that review, verification of Products required, field dimensions and elevations, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.
- C. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of completed Work.
- D. Revise and resubmit submittals as required by the Engineer; identify changes made since previous submittal.
- E. Submit number of copies Contractor requires, plus two copies Engineer will retain, at a minimum, unless otherwise indicated at the Pre-Construction Conference.
- F. Transmit each submittal with Engineer accepted form.
- G. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

- H. Prior to commencing construction activities, Contractor shall provide two (2) copies of the corresponding Project safety plan to the Engineer.

1.21 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within fifteen [15] days after date of Owner-Contractor Agreement for Engineer review.
- B. Submit revised schedules with each Application for Payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of Work at each submission.
- C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.
- D. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.
- E. Indicate delivery dates for Owner furnished products and products identified under Allowances.

1.22 PROPOSED PRODUCTS LIST

- A. Unless required as an attachment to Bid, within 15 days after date of Owner-Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.23 PRODUCT DATA

- A. Product Data: Submit to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Submit copies and distribute in accordance with Submittal Procedures article.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.24 SHOP DRAWINGS

- A. Shop Drawings:
 - 1. Submitted to Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

2. Include detail design calculations, shop drawings, fabrication, and installation drawings, erection drawings, list, graphs, catalog sheets, data sheets, and similar items.
 3. Design calculations shall bear the signature and seal of an engineer registered in the appropriate branch and in the state wherein the project is to be built, unless otherwise directed.
 4. After review, provide copies and distribute in accordance with Submittal Procedures article and for record documents purposes as specified.
 5. Except as may otherwise be indicated herein, the Engineer will return copies of each submittal to the Contractor with comments noted thereon, within 30 calendar days following their receipt by the Engineer.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Submit number of opaque reproductions Contractor requires, plus two copies Engineer will retain.

1.25 TEST REPORTS

- A. Submit for Engineer's knowledge as contract administrator or for Owner.
- B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.26 MANUFACTURER'S INSTRUCTIONS AND CERTIFICATES

- A. When specified in individual specification sections, submit manufacturer printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. When specified in individual specifications sections, submit certifications by manufacturer to Engineer, in quantities specified for Product Data.
- D. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- E. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

1.27 QUALITY CONTROL

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturer's instructions.

- C. Comply with specified standards as minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.28 TOLERANCES

- A. Monitor fabrication and installation tolerance control of installed products over suppliers, manufacturers, products, site conditions, and workmanship, to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply fully with manufacturer's tolerances.

1.29 REFERENCES

- A. Conform to reference standards by date of issue current as of date of Contract Documents.
- B. When specified reference standard conflict with Contract Documents, request clarification from Engineer before proceeding.

1.30 MANUFACTURER'S FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to furnish qualified staff personnel to observe site conditions and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions that are supplemental or contrary to manufacturer's written instructions.

1.31 EXAMINATION

- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify utility services are available, of correct characteristics, and in correct location.
- C. Contractor is solely responsible for utility location, protection and verification. Contractor must notify New Mexico One Call System Inc., at 811, and all local utility providers, three (3) days before starting utility line construction.
- D. It shall be the responsibility of the Contractor to become acquainted with the location of all underground structures which may be encountered or which may affect the Work hereunder.

1.32 TEMPORARY SERVICES

- A. Provide, maintain and pay for suitable quality water service as required.
- B. Maintain uninterrupted water, wastewater, and electric service to all properties adjoining the Work, except where specifically approved by the authority having jurisdiction. Services damaged by the Contractor shall be immediately and permanently repaired or replaced at

the expense of the Contractor. Give a minimum of 48-hour advance notice to occupants of adjacent properties before interrupting any service. Any interruption of service shall be kept to the minimum length of time possible.

- C. Until final inspection and approval of the Work and issuance of the Certificate of Substantial Completion, the Contractor is responsible for all Work directly or indirectly affected by the Contractor's activities. Such responsibility continues for all Work detailed on the punch list that may accompany the Certificate of Substantial Completion, until satisfactorily completed by the Contractor and approved by the Owner and Engineer.
- D. Furnish, install and maintain any temporary water storage structures, electrical connections, meters, wiring, outlets, switches, lamps, etc., as necessary for the work. The Contractor shall provide such temporary heat as may be necessary for the prevention of injury to the work or material through dampness or cold. All temporary connections, installations, facilities and supplies furnished or installed as specified in this paragraph, shall be removed prior to the completion of the Contract, and the premises left perfectly clean and satisfactory to the Owner.
- E. Maintain ambient temperature above freezing in enclosed/occupied areas where construction is in progress, unless indicated otherwise in specifications.
- F. Provide temporary electricity and power outlets for construction operations, connections, branch wiring, distribution boxes, and flexible power cords as required. Do not disrupt Owner's need for continuous service.
- G. Provide and maintain required sanitary facilities and enclosures in clean and sanitary condition.

1.33 ACCESS ROADS

- A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.
- B. Existing on-site roads, designated by the Owner, may be used for construction traffic.

1.34 PROGRESS CLEANING AND WASTE REMOVAL

- A. Collect and maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
- B. Remove waste and surplus materials, rubbish, and construction facilities from site. Restore all job sites and adjoining areas, including roads and driveways, to a condition equal to or better than the original status. Special attention will be made to not disturb unimproved roads by placing any excavated material to the sides of these roads when waterlines are located along the right-of-way.
- C. Brush and trees shall be felled parallel to the right-of-way to minimize damage to trees and structures on adjacent property. All brush, tree tops, stumps and other debris shall be removed from the right-of-way and disposed of by the Contractor, subject to and in

conformity with the special provisions applying to the tract of land involved (if any). The Contractor shall not destroy nor remove any trees, shrubbery, nor any other improvements, without permission of the Owner.

- D. The Contractor shall not dispose of debris, refuse or sanitary wastes in an open dump or in a natural watercourse, whether on public or private property, or in such places that undesirable wastes can eventually be exposed or carried to a natural watercourse.

1.35 PROJECT IDENTIFICATION

- A. No Project Sign is required.
- B. The Contractor shall not erect, or permit the erection of advertising signs. Only minimal identification and direction signs shall be permitted on the site. Unnecessary or obnoxious posters, pictures, signs, symbols, drawings or writing on work, material or equipment, resulting from vandalism or other causes, shall be covered or removed by the Contractor.

1.36 BARRIERS AND FENCING

- A. Provide barriers or fencing to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage.

1.37 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections.

1.38 SECURITY

- A. Provide security and facilities to protect Work and existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.39 WATER CONTROL

- A. Provide erosion control.
- B. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. In the event that one acre of earth or more is disturbed, the Contractor shall submit to the Owner's Resident Project Representative a Storm Water Pollution Prevention Plan (SWPPP) that will address all construction phases and the proposed pollution prevention and sediment control measures. This shall be done in accordance with the National Pollution Discharge Elimination System (NPDES) general permit requirements for all construction activities, and shall include all required reporting. If the Bid Form does not include an item for preparation and implementation of the SWPPP, the cost thereof will be considered incidental to related work.
- D. The Contractor shall conduct his operations to minimize damage to natural watercourses, and shall not permit petroleum products, volatile fluid wastes, or any other wastes which are prohibited by local ordinances, or excessive amounts of silt, clay, or mud to enter any

drainage system. The bed of natural watercourses or man-made irrigation ditches shall be restored to normal gradient and cross-section after being disturbed.

1.40 POLLUTION AND ENVIRONMENTAL CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
- B. Provide dust control, erosion and sediment control, noise control, pest control and rodent control to allow for proper execution of the Work. Short term effects of dust produced by equipment will be mitigated by sprinkling traffic areas with water. Motor equipment shall be kept in repair and equipped with anti-pollution devices, if possible, to cut down on exhaust emissions. Burning as a method of cleaning or disposal will not be permitted without approval of the proper authorities.
- C. Comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act of 1970 (42 U.S.C. 1251 et seq.) as amended. Violations shall be reported to the New Mexico Environment Department.
- D. The Contractor shall be responsible for the reporting and the cleanup of spills associated with project construction and shall report and respond to spills of hazardous materials such as gasoline, diesel, motor oil, solvents, chemicals, toxic and corrosive substances, and other materials which may be a threat to the public health or the environment. The Contractor shall be responsible for reporting past spills encountered during construction and of current spills not associated with construction. Reports shall be made to the New Mexico Environment Department Emergency Response Team at (505) 476-6025 during business hours. If there is no emergency situation the Contractor can leave a message regarding the nature of the spill, location and contact information. For emergencies that require immediate attention and mitigation, and there is no response at the NMED Emergency Response Team number above, call (505) 827-9329. For emergencies that pose immediate danger to public health or property, call 911. For any and all spills, Contractor shall also immediately contact the Owner's Resident Project Representative.
- E. The Contractor shall clean up any unreported spills associated with project construction identified after construction.

1.41 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials, prior to Substantial Completion review.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.42 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components specifically identified for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by the Contract Documents.
- C. Provide interchangeable components of same manufacturer for components being replaced.

1.43 DELIVERY, HANDLING, STORAGE, AND PROTECTION

- A. Deliver, handle, store, and protect Products in accordance with manufacturer's instructions.

1.44 SUBSTITUTIONS

- A. Substitutions will only be considered when Product becomes unavailable through no fault of Contractor, or where an "approved equal" is specifically allowed elsewhere in the Technical Specifications or noted on the Drawings. In such cases, the brand name and/or model number of products that have been identified in these Specifications serve as the basis of the design. These products may be substituted with other products that meet the same manufacturing standards, quality, performance and desired characteristics of the Specifications when approved by the Engineer or Owner's representative.
- B. Specific manufacturers may be required for certain items in order to maintain consistency with the Owner's existing inventory. In such cases, substitutions will not be allowed as indicated in each specification section where applicable.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. Submit three [3] copies of request for Substitution to the Engineer for consideration. Limit each request to one proposed Substitution.

1.45 CLOSEOUT PROCEDURES

- A. Submit written certification Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for Engineer's inspection.
- B. Submit final Application for Payment identifying total adjusted Contract Price, previous payments, and amount remaining due.

1.46 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.

- B. Upon completion of the work under this contract, thoroughly clean and make any needed repairs caused by damage during construction to any existing utilities or other structures on the site.
- C. Notify the Engineer in writing once final cleaning is complete. The final estimate will not be prepared until the Contractor has complied with all requirements set forth and the Engineer has made his final inspection of the entire work and is satisfied that it is properly constructed and the site properly cleaned.

1.47 STARTING OF SYSTEMS

- A. Provide seven [7] days notification prior to start-up of each item.
- B. Ensure each piece of equipment or system is ready for operation.
- C. Execute start-up under supervision of responsible persons in accordance with manufacturer's instructions.
- D. Submit written report stating equipment or system has been properly installed and is functioning correctly.

1.48 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six [6] months.
- C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.

1.49 TESTING, ADJUSTING, AND BALANCING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- B. Owner retains the right to appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing. Reports will be submitted by independent firm to Engineer indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with requirements of Contract Documents.
- C. Contractor will cooperate with independent firm; furnish assistance as requested.
- D. Re-testing required because of non-conformance to specified requirements will be charged to Contractor.

1.50 PROTECTING INSTALLED CONSTRUCTION

- A. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- B. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- C. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- D. Prohibit traffic from landscaped areas.

1.51 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of Contract Documents to be utilized for record documents.
- B. Record actual revisions to the Work. Record information concurrent with construction progress.
- C. Specifications: Legibly mark and record at each Product section description of actual Products installed.
- D. Record Documents and Shop Drawings (As-Built Drawings): Legibly mark each item to record actual construction. Deliver two (2) sets of As-Built Drawings with redlines to the Owner upon completion of the Project. The As-Built Drawings will be submitted to the Engineer prior to processing of final payment to the Contractor.
- E. Contractor shall prepare record drawing information under the direction of a Licensed Professional Surveyor. As-Built Record Drawings shall include elevation at top of pipe, northing and easting of top of pipeline or new utility at intervals not to exceed 100 feet and at all fittings, valves and transitions and other appurtenances as well as finished grade elevations at each location cited above, and invert elevations of all pipes entering and exiting manholes. Contractor shall provide survey points for manhole rim and sump elevations. Ties to surface features for triangulation purposes in the field shall also be included. Final As-Built Record Drawings shall be stamped by a Licensed Professional Surveyor, tied to established control monuments and other reference points (including D.O.T. monuments and mile markers if available) on the New Mexico State Plane Coordinate System, Central Zone, NAD83/NAVD88 datum, stating combined ground-to-grid scale factor used, equipment used and date of completion of survey.
- F. Submit documents to Engineer together with claim for final Application for Payment.

1.52 OPERATION AND MAINTENANCE DATA

- A. Submit 3 sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.

- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.
- C. Internally subdivide binder contents with permanent page dividers, logically organized.
- D. Contents:
 - 1. Part 1: Directory
 - a. List names, addresses, and telephone numbers of Engineer, Contractor, subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions, arranged by system:
 - a. Equipment summary, operational procedures, preventive maintenance procedures and schedules, parts list, shop drawings, safety issues.
 - 3. Part 3: Project documents and certificates.
 - a. All equipment warranties, affidavits, and certifications required by the Technical Specifications shall be placed in this part.

1.53 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.
- B. Deliver to project site and place in location as directed by Engineer; obtain receipt prior to final payment.

1.54 WARRANTIES AND PRODUCT REGISTRATION

- A. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers for all products with extended warranties beyond one (1) year.
- B. Execute and assemble product registration documents from suppliers and manufacturers, on Owner's behalf, for all products requiring such registration, for recall or warranty purposes.
- C. Submit prior to final Application for Payment.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 03 05 00

BASIC CONCRETE MATERIALS AND METHODS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes formwork, reinforcement, accessories, cast-in-place concrete, transporting, placing, finishing, curing, and other pertinent items of construction.
- B. Concrete and Standards - Except as noted or modified in this section, all concrete materials, transporting, placing, finishing, curing, and sealing shall conform to requirements as follows:
 - 1. American Institute of Concrete (ACI)
 - a. 301 - Specifications for Structural Concrete.
 - b. 302.1R - Guide to Concrete Floor and Slab Construction.
 - c. 304R - Guide for Measuring, Mixing, Transporting and Placing Concrete.
 - d. 305.1 - Specification for Hot Weather Concreting.
 - e. 306.1 - Standard Specification for Cold Weather Concreting.
 - f. 308.1 - Standard Specification for Curing Concrete.
 - g. 318 - Building Code Requirements for Structural Concrete.
 - h. 347R - Guide to Formwork for Concrete.
 - i. SP-66 - ACI Detailing Manual.
 - 2. ASTM International (ASTM)
 - a. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - b. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 - c. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - d. ASTM C33 - Specifications for Concrete Aggregates.
 - e. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - f. ASTM C40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.
 - g. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - h. ASTM C94 - Specification for Ready-Mixed Concrete.
 - i. ASTM C138 - Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.
 - j. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - k. ASTM C150 - Standard Specification for Portland Cement.
 - l. ASTM C156 - Standard Test Method for Water Loss [from a Mortar Specimen] Through Liquid Membrane-Forming Curing Compounds for Concrete.
 - m. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.

- n. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 - o. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - p. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
 - q. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
 - r. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - s. ASTM C989 - Standard Specification for Slag Cement for Use in Concrete and Mortars.
 - t. ASTM C1064 - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
 - u. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete.
 - v. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
 - w. ASTM C1260 - Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method).
 - x. ASTM C1550 - Standard Test Method for Flexural Toughness of Fiber Reinforced Concrete (Using Centrally Loaded Round Panel).
 - y. ASTM C1567 - Standard Test Method for Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method).
 - z. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete.
 - aa. ASTM C1609 - Standard Test Method for Flexural Performance of Fiber-Reinforced Concrete (Using Beam with Third-Point Loading).
 - bb. ASTM C1778 - Standard Guide for Reducing the Risk of Deleterious Alkali-Aggregate Reaction in Concrete.
3. American Association of State Highway & Transportation Officials (AASHTO):
- a. PP 65 - Standard Practice for Determining the Reactivity of Concrete Aggregates and Selecting Appropriate Measures for Preventing Deleterious Expansion in New Concrete Construction.

1.2 QUALITY ASSURANCE

- A. Inform Engineer at least 48 hours in advance of time at which Contractor intends to place concrete.
- B. When required by any applicable permits, such as CID permits, Contractor shall have reinforcement inspected by the agency with jurisdiction prior to placement of concrete.
- C. Construct and erect concrete formwork in accordance with ACI 301 and ACI 347R.
- D. Concrete tests shall be in accordance with requirements of ACI 301, except as noted or modified in this Section.
 - 1. Strength test:
 - a. Mold and cure 5 cylinders from each sample.

- b. Test one at 7 days and one at 14 days for information and two at 28 days for acceptance.

E. Samples:

- 1. Collect the following minimum samples for each 28-day strength concrete used in the work for each days placing:

<u>Quantity</u>	<u>Number of Samples</u>
50 cubic yards or less	1
50 to 100 cubic yards	2
100 cubic yards or more	2 plus 1 sample for each additional 100 cubic yards

- 2. Sampling should be in accordance with ASTM C172.
- 3. Forming cylinders in accordance with ASTM C31.
- 4. No sample shall be required for thrust blocks nor fence posts.
- 5. Hold fifth cylinder for future considerations. Deliver to Owner upon determination of substantial completion and prior to final payment.
- 6. Sample marking.
 - a. Mark or tag each sample of compression test cylinders with date and time of day cylinders were made.
 - b. Identify location in work where concrete represented by cylinders was placed.
 - c. Identify delivery truck or batch number, air content and slump.
- 7. Slump test:
 - a. Conduct test for each strength test sample and whenever consistency of concrete appears to vary, in accordance with ASTM C143.
- 8. Air content:
 - a. Conduct test from 1 of first 3 batches mixed each day and for each strength test sample, in accordance with ASTM C231, 138 or 173.
- 9. Temperature:
 - a. Conduct test in accordance with ASTM C1064.

- F. Coordinate concrete placement with the Engineer to ensure proper testing in compliance with the Drawings and Specifications. The cost of all tests shall be covered by the Testing Allowance provided for in the bid schedule, except for failed tests, or new analyses required due to failed tests.

- G. The Contractor is free to take additional specimens for his own information, at his own expense, not reimbursable from the Testing Allowance.

- H. Acceptance of Concrete: Strength level of concrete will be considered satisfactory so long as average of all sets of 3 consecutive strength test results equal or exceeds specified 28-day strength and no individual strength test result falls below specified strength (f_c') by more than 500 psi when specified compressive strength is 5000 psi or less; or by more than **0.10 f_c'** when specified compressive strength is more than 5000 psi.

- I. Failure of Test Cylinder Results: Upon failure of test cylinder results, Engineer may require Contractor, at his expense, to test remaining cylinder after curing for a period of time specified by Engineer. If strength level of this cylinder is not greater than specified

28-day strength, Engineer may require Contractor to obtain and test at least three 2-inch diameter cored samples from an area in question.

1. Conform to ASTM C42.
2. Concrete will be considered adequate if average of 3 cores is at least 85 percent of, and if no single core is less than 75 percent of, specified 28-day strength.
3. Upon failure of core test results, Engineer may require Contractor, at his expense, to perform load tests as specified in ACI 318.
4. Fill all core holes as specified for repairing defective concrete.

J. Completed Work

1. Completed concrete work which fails to meet 1 or more requirements, but which has been repaired to bring it into compliance, will be accepted without qualification.
2. Completed concrete work which fails to meet 1 or more requirements and which cannot be brought into compliance shall be rejected as provided in these Contract Documents. In this event, modifications shall be required to assure that concrete work complies with requirements. Modifications, as directed by Engineer, to be made at no additional cost to Owner.

K. Perform concrete reinforcing and cast-in-place concrete work in accordance with ACI 301.

L. The maximum deviation of the top surface of curb and gutter shall not exceed 1/8" in 10' nor shall the inside face deviate more than 1/4" in 10' from a straight line. Prior to or during final inspection, curb and gutter shall be water flow tested as directed by the Engineer. All areas with standing water will be rejected.

PART 2 PRODUCTS

2.1 FORM MATERIALS AND ACCESSORIES

- A. Steel Forms: Symons "Steel-Ply", Simplex "Industrial Steel Frame Forms", Universal "Uniform". Forms shall be clean, straight and true, without surface defects.
- B. Plywood Forms: Product standard PS-1, waterproof, resin-bonded exterior type Douglas Fir or Larch. Forms shall be clean, straight and true, without surface defects.
- C. Lumber: Douglas Fir or Larch, straight, uniform width and thickness, clean and free from offsets, holes, dents and other surface defects.
- D. Chamfer Strips: Clean white pine, surface against concrete planed.
- E. Form Release Agent: Colorless mineral oil not capable of staining concrete or impairing natural bonding characteristics of coating intended for use on concrete.

2.2 REINFORCEMENT MATERIALS

- A. Reinforcing Steel: ASTM A615, deformed. Reinforcement bar, size and spacing as indicated on the Drawings.

- B. Welded wire fabric reinforcement shall conform to the requirements of ASTM A1064 and the details shown; provided, that welded wire fabric with longitudinal wire of W4 size wire and smaller shall be either furnished in flat sheets or in rolls with a core diameter of not less than 10 inches; and provided further, that welded wire fabric with longitudinal wires larger than W4 size shall be furnished in flat sheets only.
- C. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for support of reinforcing; plastic tipped or non-corroding for supports in slabs where supports are exposed to weather.
- D. Concrete blocks used to support and position reinforcement steel, shall have the same or higher compressive strength as specified for the concrete in which it is located. Wire ties shall be embedded in concrete block bar supports.
- E. Fabricate concrete reinforcing in accordance with ACI SP-66.

2.3 CONCRETE MATERIALS

- A. Cementitious Materials:
 - 1. Portland Cement: ASTM C150 Type I.
 - 2. Fly Ash: ASTM C618, Class F or C.
 - 3. Slag Cement: ASTM C989, Grade 100 or 120.
 - 4. Silica Fume: ASTM C1240.
 - 5. Metakaolin: ASTM C618, Class N.
- B. Fine and Coarse Aggregates: ASTM C33.
- C. Water: ASTM C1602/C1602M, Clean and not detrimental to concrete.
- D. Chemical Admixtures (when applicable): Compatible with each other and free of intentionally-added chlorides.
 - 1. Air Entraining Admixture: ASTM C260.
 - 2. Water-Reducing Admixture: ASTM C494, Type A.
 - 3. Mid-Range Water-Reducing Admixture: ASTM C494, Type A.
 - 4. High-Range Water-Reducing Admixture: ASTM C494, Type F.
 - 5. Accelerating Admixture: ASTM C494, Type C or E.
 - 6. Retarding Admixture: ASTM C494, Type B or D.
 - 7. Workability-Retaining Admixture: ASTM C 494, Type S.
 - a. Shall retain concrete workability without affecting time of setting or early-age strength development.
 - 8. Alkali-Silica Reaction Inhibiting Admixture: ASTM C494, Type S
 - a. Shall contain a nominal lithium nitrate content of 30 percent.

2.4 CONCRETE MIX

- A. Mix and deliver concrete in accordance with ASTM C94.
- B. Re-tempering of prepared concrete will not be permitted.
- C. Furnish concrete of the following strength:

Type of Work	Min. 28-Day Compressive Strength (psi)	Max. Size Aggregate (in.)	Min. Cement W/C per CY (94# sacks)	Maximum w/cm (by wt.)
Slabs on grade, footings floor slabs, and all other concrete items not specified elsewhere.	4,000	1	6.0	0.50
Site work concrete such as fence posts, thrust blocks, valve collars, etc.	3,000	1	5.0	0.50

D. Proportioning:

1. Proportion ingredients to produce a well-graded mix of high-density maximum workability consistent with approved mix design.
2. Entrained air - all concrete exposed to freeze-thaw cycles under saturated conditions:
 - a. Five (5) percent, plus or minus one (1) percent, for concrete in the forms. Concrete samples for air content tests shall be taken at the end of the concrete truck chute or the output of the concrete pump, whichever applies. A reduction in air content of pumped concrete should be expected. Contractor shall be responsible to coordinate with the concrete supplier to provide the specified air content of the in-place concrete.
 - b. Refer to ACI 301 for further requirements.
3. Fly ash, silica fume, and slag cement:
 - a. Fly ash: The mineral admixture Class F fly ash shall be proportioned by weight of cement to provide a fly ash to portland cement ratio not less than 1:4 and not less than 25 per cent of the total cementitious material. Portland cement concrete submitted under this specification shall be proportioned with Class F fly ash, unless a variance is authorized by the Engineer. Alternatively, lithium-based admixture can be used in lieu of Class F fly ash to mitigate ASR. The Contractor shall provide the Engineer with chemical and physical analysis of the fly ash.
 - b. Silica fume: Silica fume may be added to the mix and shall be proportioned by weight of cement to provide a silica fume to Portland cement ratio not less than 1:25 and no greater than 1:7. Portland cement concrete using silica fume shall follow ASTM C1240 standards.
 - c. Slag cement: Slag cement may be added to the mix and shall be proportioned by weight of cement to provide a slag cement to Portland cement ratio of no greater than 80 percent. Slag cement can consist of Grade 100 or grade 120. Portland cement concrete using slag cement shall follow ASTM C989 standards.
4. Aggregates supplied under this Specification shall be assumed to be "alkali-silica reactive", ASR. Mitigation measures, such as the use of supplementary cementitious materials or lithium nitrate based admixtures or the combination of both, shall be utilized in the concrete mixtures to mitigate alkali-silica reaction, when the aggregates are known to be alkali-silica reactive. Replacement levels of supplementary cementitious materials and the dosage of lithium nitrate based

admixtures shall be determined in accordance with the performance-based approach provided in ASTM C1778. Variance from this position for a particular aggregate source may be authorized by the Engineer. Application for a variance may be made to the Engineer.

- a. Portland cement concrete design mixes using non alkali-silica reactive aggregates will not be required to be proportioned with Class F fly ash.
- E. Batching and Mixing Equipment: Conform to ACI 304R.
- F. Slump:
1. Keep as low as possible consistent with proper handling and thorough compaction.
 2. Shall not exceed 4 inches unless otherwise authorized by Engineer.

PART 3 EXECUTION

3.1 FORMWORK ERECTION

- A. Erect formwork, shoring and bracing to achieve design requirements.
- B. Erect forms substantially and sufficiently tight to prevent leakage of mortar and braced or tied to maintain desired position, shape and alignment before, during, and after concrete placement.
- C. Carefully remove forms only after concrete is able to support all dead and live loads and curing requirements are met. Apply curing compound to all formed surfaces immediately after form removal.
- D. Camber slabs and framing to achieve ACI 301 tolerances.
- E. Provide bracing to ensure stability of formwork.
- F. Clean forms as erection proceeds, to remove foreign matter.

3.2 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS

- A. Provide formed openings where required for work to be embedded in and passing through concrete members.
- B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.
- C. Install concrete accessories straight, level, and plumb.
- D. Install water stops continuous without displacing reinforcement.

3.3 REINFORCEMENT PLACEMENT

- A. Place reinforcement, supported and secured against displacement.

- B. Ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings.

3.4 PLACING CONCRETE

- A. Do not place concrete during rain, sleet, or snow unless adequate protection is provided and Construction Observer approval is obtained. Do not allow rainwater to increase mixing water or damage surface finish.
- B. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.
- C. Convey concrete from mixer to final position as rapidly as practicable without segregation or loss of material. Limit chute length to less than 20 feet with maximum slope of 1 vertical to 2 horizontal.
- D. Maximum height of concrete free fall is 4 feet.
- E. Place concrete continuously between predetermined expansion, control and construction joints. Do not break or interrupt successive pours creating cold joints.
- F. On large volume pours, concrete shall be placed with the aid of approved mechanical vibrators. Vibration shall be supplemented by manual forking or spading adjacent to the forms on exposed faces in order to secure smooth dense surfaces. The concrete shall be thoroughly consolidated around reinforcement, pipes or other shapes built into the work.
- G. Where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrink grout.
- H. Screed slabs-on-grade and concrete base for toppings level.

3.5 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Remove formwork progressively and in accordance with code requirements.

3.6 FLOOR FINISHING

- A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.1R.
- B. Uniformly spread, screed, and float concrete.
- C. In areas with floor drains, maintain floor level at walls and slope surfaces uniformly to drains.
- D. Provide surface conforming to proper elevation and contour with all aggregates completely embedded in mortar by screening.

- E. Provide an initial float as soon as concrete has stiffened sufficiently for proper working.
- F. Provide a second floating at time of initial set.
- G. Apply a broom finish.

3.7 CURING

- A. Immediately after placement, protect concrete from premature drying.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete, for not less than ten (10) days in warm to hot weather (per ACI 305.1), and fourteen (14) days in cold weather (per ACI 306.1) after placing, unless otherwise indicated by the Engineer, in accordance with the methods specified herein for the different parts of the Work.
 - 1. Cold weather is defined as when the temperature reaches or goes below 35 degrees F for one (1) hour during any 24-hour period during the curing period.
- C. Use a pre-approved concrete curing method. Acceptable curing methods, as detailed in ACI 308.1, are as follows:
 - 1. Water Curing Methods:
 - a. Ponding/Immersion.
 - b. Fogging/Sprinkler.
 - c. Burlap/Cotton Mats/Absorbent Material.
 - d. Wet Sand Curing.
 - e. Straw/Hay.
 - f. Plastic Film.
 - g. Reinforced Paper.
 - 2. Liquid Membrane-Forming Compounds.
- D. The covering used, if applicable, must be overlapped adequately to ensure 100% coverage, and must not be allowed to become dry at any point during the curing period. Place and anchor covers, mats, and/or sheeting to ensure continuous contact with the concrete surfaces.
- E. When using one of the water curing methods, keep the concrete structures thoroughly and continuously moist and covered during the entire curing period.

3.8 FIELD QUALITY CONTROL

- A. Three (3) Concrete Test Cylinders: Taken for every 75 or less cubic yards of each class of concrete placed.
- B. One (1) Additional Test Cylinder: Taken during cold weather concreting, and cured on job site under same conditions as concrete incorporated into the Work.
- C. One (1) Slump Test: Taken for each set of test cylinders taken and whenever consistency of concrete appears to vary.

- D. One (1) Air Content Test: Taken for each set of test cylinders taken.
- E. One (1) Concrete Temperature Measurement: Taken for each set of test cylinders taken.
- F. One (1) Ambient Air Temperature Measurement: Taken for each set of test cylinders taken and at the beginning of each day that concrete is being placed.

3.9 DEFECTIVE CONCRETE

- A. Modify or replace concrete not conforming to required lines, details and elevations, as directed by Engineer.

END OF SECTION

SECTION 33 34 00

FORCE MAINS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Force mains.
 - 2. Bedding and cover materials.
- B. Related Sections:
 - 1. 01 00 00 – Basic Requirements
 - 2. Section 03 05 00 - Basic Concrete Materials and Methods.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Pipe and Fittings:
 - 1. Basis of Measurement: By linear foot.
 - 2. Basis of Payment: Includes hand trimming, excavation, thrust restraints, pipe, fittings, backfill, bedding and compaction.
- B. Combination Air Valves:
 - 1. Basis of Measurement: By the unit.
 - 2. Basis of Payment: Includes vault, combination air valve, fittings and accessories.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO):
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. American Society for Testing and Materials International (ASTM):
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 2. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (6,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 3. ASTM F2164 - Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure.
 - 4. ASTM D2620 - Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.
 - 5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

- C. American Water Works Association (AWWA):
 - 1. AWWA C105/A21.5 - Polyethylene Encasement for Ductile Iron Pipe Systems
 - 2. AWWA C110/A21.10 - Ductile Iron and Gray Iron Fittings
 - 3. AWWA C111/A21.11 - Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings
 - 4. AWWA C115/A21.15 - Flanged Ductile Iron Pipe with Ductile Iron or Gray Iron Threaded Flanges
 - 5. AWWA C153/A.21.53 - ANSI Standard for Ductile-Iron Compact Fittings.
 - 6. AWWA C605 - Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings.
 - 7. AWWA C900 - Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in.
 - 8. AWWA C905 - Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 in. through 48 in.
 - 9. AWWA M23 - AWWA Manual of Supply Practices PVC Pipe - Design and Installation, Second Edition.
- D. Plastic Pipe Institute.
- E. Ductile Iron Pipe research Association.

1.4 SUBMITTALS

- A. Section 01 00 00 - Submittal Procedures: Requirements for submittals.
- B. Shop Drawings: Submit shop drawings for force main pipe. Indicate piece numbers and locations and restrained joint locations.
- C. Product Data: Submit data indicating pipe material used, pipe accessories, restrained joint details, locations, manufacturers' specifications, and materials.
- D. Testing Plan: Contractor must submit proposed testing procedure and equipment to be employed for hydrostatic testing of lines for approval by Engineer.
- E. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 00 00 - Execution Requirements: Requirements for submittals.
- B. Project Record Documents: Record location of pipe runs, connections, and installed invert, or top of pipe elevations, elevations, as approved by the Engineer, at 100 foot intervals and at pipe terminations on as-built drawings
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 FIELD MEASUREMENTS

- A. Verify field measurements and elevations are as indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 00 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
- B. All materials will be subject to inspection and approved by the Engineer after delivery and no broken, cracked, misshapen, imperfectly coated, or otherwise damaged or unsatisfactory material shall be used.
- C. When lifting with slings, only wide fabric choker slings capable of safely carrying the load shall be used to lift, move, or lower pipe and fittings. Wire rope and chain are prohibited. Slings shall be of sufficient capacity for the load, and shall be inspected before use. Worn or damaged equipment shall not be used.
- D. Do not place materials on private property without written permission of property owner.
- E. During loading, transporting and unloading, exercise care to prevent damage to materials.
- F. All material found during the progress of the work to have cracks, flaws, or other defects shall be rejected and promptly removed from the site.
- G. If damage occurs to any pipe, fittings, valves, or accessories in handling, the damage shall be immediately brought to the Engineer's attention. The Engineer shall prescribe corrective repairs, or rejection of the damaged items.

1.8 COORDINATION

- A. Section 01 00 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate the Work related to any required trenching and connection to existing municipal sewer utility service and/or reclaimed wastewater.

PART 2 PRODUCTS

2.1 FORCE MAIN

- A. Polyvinylchloride (PVC) Pipe:
 - 1. PVC pipe shall be AWWA C900; DR 18, for pipe 4-inches in diameter or greater.
 - a. Pipe shall comply with industry standards, and pipe color shall comply with the following:
 - 1) Blue: Potable Water
 - 2) White: Irrigation and Water
 - 3) Green: Sanitary Sewer

- 4) Purple: Reclaimed Water
2. Fittings: Ductile Iron, Compact MJ Fittings AWWA/ANSI C153/A21.53. All ductile iron pipe and fittings shall be coated in Protecto 401 ceramic epoxy coating.
 - a. Interior/Exterior Lining: Bituminous outside coating: AWWA C151, cement-mortar lining: AWWA C104.
 - b. Pressure rating shall be rated to the maximum rated pressure of the pipe.
 - c. Marked with pressure rating, nominal diameter of opening, manufacturer's identification, and degree of bend.
3. Joints: Mechanical conforming to AWWA/ANSI C111/A21.11. Solvent-cement couplings are not permitted.
4. Joint Restraints: "EBAA Iron Megalug®", or approved equal, for all pipe 4" diameter and greater, installation and spacing per manufacturer's specifications.
5. All buried metallic components shall be wrapped in 8-mil polyethylene.

2.2 PLUG VALVES

- A. Manufacturers:
 1. Pratt
 2. DeZurik
 3. Or approved equal
 4. Substitutions: Section 01 00 00 - Product Requirements.
- B. Resilient-Seated Eccentric Plug Valves: AWWA C517.
 1. Body, Bonnet, and Plug: Grey Iron for valves meeting ASTM A126 Class B, Ductile Iron for valves meeting ASTM A536.
 2. Seat: Welded nickel (minimum nickel content of 95%) or type 316 Stainless Steel.
 3. Bearings: Stainless Steel.
 4. Bolts and Nuts: Zinc Plated Steel.
 5. Operating Nut: Square; Ductile Iron; open counterclockwise unless otherwise indicated.
 6. Ends: Flanged or mechanical joint as directed by the Engineer.
 7. Coating: Fusion bonded epoxy conforming to AWWA C550; interior/exterior.
 8. Sizes 12 inch diameter and smaller: 175 psig.

2.3 VALVE BOXES

- A. Per City of Carlsbad Public Infrastructure Specifications.
- B. Cast iron non-locking lid marked with "SEWER".

2.4 UNDERGROUND PIPE MARKERS

- A. Underground Utility Marking Tape: Bright colored, continuously printed, minimum 6 inches wide by 4-mil thick, manufactured for direct burial service, imprinted with "SEWAGE FORCE MAIN" (or similar wording) in large letters, on green tape in

conformance with APWA color code specifications for underground tape systems. The tape shall be constructed of material that is impervious to alkalis, acids, chemical reagents, and solvents found in the soils.

- B. Tracer Wire: Per City of Carlsbad Public Infrastructure Specifications
- C. Tracer Wire Access Box: Per City of Carlsbad Public Infrastructure Specifications

2.5 BEDDING AND COVER MATERIALS

- A. Bedding: Per City of Carlsbad Public Infrastructure Specifications
- B. Soil Backfill from Above Pipe to Finish Grade: Per City of Carlsbad Public Infrastructure Specifications

2.6 BOLTS AND NUTS

- A. Zinc-plated or fluoropolymer coated, or 316 stainless steel, bolts and nuts shall be used for the installation of pipelines up to 500 mm (20") diameter and shall be carbon steel conforming to ASTM A307, Grade A, unless otherwise indicated on the approved drawings. Bolts and nuts shall have standard ANSI B1.1, Class 2A coarse threads.
- B. Stainless steel bolts and nuts shall be used for the installation of pipelines 600 mm (24") diameter and larger and for submerged flanges. Bolts and nuts shall be Type 316 stainless steel conforming to ASTM A193, Grade B8M for bolts, and Grade 8M for nuts.
- C. All bolt heads and nuts shall be hexagonal, except where special shapes are required. Bolts shall be of such length that not less than 6.4 mm (¼") or more than 12.7 mm (½") shall project past the nut in tightened position.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 00 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify trench cut and excavation base are ready to receive work and excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

- A. Correct over excavation with fine aggregate.
- B. As per pipe manufacturer requirements, remove large stones or other hard matter capable of damaging pipe or impeding consistent backfilling or compaction.

3.3 INSTALLATION - PIPE

- A. Install pipe, fittings, and accessories in accordance with Drawings and manufacturer's recommendations.
- B. The interior of the pipe shall be thoroughly cleaned of all foreign matter before being gently lowered into the trench and shall be kept clean during the laying operations by means of plugs or other approved methods. During suspension of work for any reason at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud or other foreign material from entering the pipe.
- C. Lines shall be laid straight, and depth of cover shall be maintained uniform with respect to finish grade, whether grading is either completed or proposed at time of pipe installation. When a grade of slope is shown on the drawings, batter boards with string line paralleling design grade, or other previously approved means, shall be used to assure conformance to required grade. All pipe shall be laid within a pipe diameter of lines and grades indicated.
- D. Connect to existing sewer system, re-use piping system and/or wastewater treatment plant, as shown on the Drawings.
- E. Dresser couplings required for transitions from one pipe to another shall be stainless steel.
- F. Install tracer wire per City of Carlsbad Infrastructure Specifications.
- G. Install underground utility marking tape continuous, buried 24 inches directly above pipe.
- H. Pipe bending maximum radius shall not exceed manufacturer's recommendations.
- I. Install Work in accordance with State of New Mexico Public Work's standards.

3.4 JOINING PVC AND/OR DUCTILE IRON

- A. The joints of all pipelines shall be made absolutely tight. Where shown on Drawings or where, in the opinion of the Engineer, settlement or vibration is likely to occur; all pipe joints shall be bolted, or retained accordingly.
- B. Push-on joints shall be made in strict, complete compliance with the manufacturer's recommendations. Lubricant, if required, shall be an inert, nontoxic, water soluble compound incapable of harboring, supporting, or culturing bacterial life. Manufacturer's recommendations shall be submitted to Engineer for review and approval before work is begun.
- C. The joints of all PVC pipelines shall be made in conformity with the recommendations of the pipe manufacturer.
- D. Mechanical Joint and Flange Installation: Mechanical joint and flange connections shall be installed in accordance with the manufacturer's recommended procedure. MJ adapter and flanges shall be centered and aligned to the mating component before assembling and

tightening bolts. In no case shall MJ gland or flange bolts be used to draw the connection into alignment.

3.5 INSTALLATION - CRADLES AND ENCASEMENT

- A. Provide concrete cradles and encasement for pipeline where indicated on Drawings.
- B. Sanitary sewers and force mains locations relative to potable waterlines shall be in accordance with regulatory standards. Standard installations, unless otherwise approved by the Engineer and regulatory agency, shall have a minimum of 10 feet horizontal clearance with parallel potable waterlines, and 18 inches vertical clearance when crossing potable waterlines. When it is impossible to maintain this separation the force main will be pressure tested at 150 psi to assure tightness. Concrete encasement, when required, shall be constructed in accordance with details shown on the Drawings using 2,500 psi minimum compressive strength concrete. Encasement shall be constructed where:
 - 1. the waterline crosses under, or at a depth which provides less than 18 inches clearance distance between pipes when crossing over sewer lines; encasement shall extend a minimum of ten feet on each side of the point of crossing; or
 - 2. the Engineer requires or the Drawings show the line encased.
- C. The points of beginning and ending of pipe encasement shall be not more than 6 inches from a pipe joint to protect the pipe from cracking due to uneven settlement of its foundation, or the effects of superimposed live loads.

3.6 FIELD QUALITY CONTROL

- A. Section 01 00 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Flushing: All sewer mains shall be flushed to remove all sand and other foreign matter. The velocity of the flushing water shall be at least 4 feet per second. Flushing shall be terminated when no sand or other debris is noted for a minimum of 5 minutes. Dispose of the flushing water without causing a nuisance or property damage in a manner acceptable to the Owner, Engineer, and/or regulatory agencies.
- C. Perform pressure test on force main system in accordance with applicable standards:
 - 1. PVC Pipe: AWWA C605.
 - 2. Ductile Iron Pipe: AWWA C600.
 - 3. HDPE Pipe: ASTM F2164.
 - 4. Steel Pipe: AWWA C200.
- D. Hydrostatic pressure for testing shall be 1.5 times the designed working pressure at the lowest point in the line section being tested, or 150 psi minimum pressure, whichever is greater. In the event it is not possible to measure the pressure at the lowest point directly, this pressure may be calculated by measuring the pressure elsewhere within the section and calculating the pressure based on elevation difference.
 - 1. Warning: Safety is of paramount importance when conducting hydrostatic pressure leak test due to possibility of sudden violent rupture or failure.

2. In no case shall the test pressure exceed the manufacturers' recommended maximum safe test pressure for the pipe or fittings.
 3. No observable leakage is allowed. Measurable leakage must be within the maximum allowable limits set forth by applicable AWWA and ASTM standards. Connections shall remain uncovered during testing to determine if leaking is occurring.
 4. Any leaks detected during testing shall be repaired. After repairs are completed, another full duration test shall be performed on the section of the pipeline to which the repairs were made.
- E. Request inspection prior to and immediately after placing bedding.
- F. Compaction Testing for Bedding: In accordance with ASTM D1557.
- G. When tests indicate Work does not meet specified requirements, remove work, replace and retest.
- H. Compaction testing shall be done to the extent such that the Owner and Engineer can be reasonably assured that the backfill has been placed in accordance with the requirements of the Contract Documents. When a testing allowance is established on the Bid Form, the Owner and Engineer will determine the testing frequency to be used throughout the project. If no allowance is included, the frequency of testing shall be at least once every 400 linear feet of trenching.

3.7 PROTECTION OF FINISHED WORK

- A. Section 01 00 00 - Execution Requirements: Requirements for protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION