

KID 5400 SOUTH WATER LINE PHASE 2 PROJECT 25-01

**Contract Documents &
Technical Specifications for**



JUNE 2025

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SECTION 00 01 05 - PROFESSIONAL CERTIFICATION

PLANS AND SPECIFICATIONS FOR 5400 SOUTH WATER LINE

REPLACEMENT (PHASE 2)

PROJECT 25-01

June 2025

CIVIL ENGINEER

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Utah.



James F. Woodruff, P.E.
Date: June 2, 2025 Reg. No. 270304-2203

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SECTION 00 01 10 - TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING REQUIREMENTS

Division 00 -- Procurement and Contracting Requirements

00 01 01 - Project Title Page

00 01 05 - Professional Certifications Page

00 01 10 - Table of Contents

00 11 13 - Advertisement for Bids

00 21 13 - Instructions to Bidders

00 26 00 - Procurement Substitution Procedures

00 26 00 - Procurement Substitution Request Form

00 41 00 - Bid Form

00 43 13 - Bid Security Form

00 45 19 - Non-Collusion Affidavit

00 51 00 - Notice of Award

00 52 00 - Agreement

00 55 00 - Notice to Proceed

00 62 76 - Application for Payment Form

00 63 13 - Request for Information Form

00 63 49 - Work Change Directive Form

00 63 63 - Change Order Form

00 65 16 - Certification of Substantial Completion Form

00 72 00 - General Conditions

00 73 00 - Supplementary Conditions

00 74 00 - Special Conditions

SPECIFICATIONS

Division 01 -- General Requirements

01 11 00 - Summary of Work

01 14 00 - Work Restrictions

01 29 27 - Measurement and Payment

01 29 76 - Progress Payment Procedures

01 31 13 - Project Coordination

01 31 19 - Project Meetings

00 33 00 - Submittal Procedures

01 45 00 - Quality Control

01 73 29 - Cutting and Patching

01 77 00 - Closeout Procedures

Division 31 -- Earthwork

31 05 05 - Sitework Demolition and Removal

31 05 13 - Soils for Earthwork

31 23 13 - Subgrade Preparation

31 23 19 - Dewatering

31 41 00 - Shoring

Division 32 -- Exterior Improvements

32 11 23 - Aggregate Base Courses

32 12 16 - Asphalt Paving

32 97 00 - Restoration of Disturbed Areas

Division 33 -- Utilities

33 11 14 - Ductile Iron Pipe and Fittings

33 13 00 - Disinfecting of Water Utility Distribution

33 13 10 - Pipeline Pressure and Leakage Testing

40 05 58 - Process Valves

APPENDICES

Appendix A - Kearns Improvement District Design Standards and Construction Specifications

Appendix B - KID 5400 South Water Line Replacement (Phase 2) Project Drawings

END OF SECTION 00 01 10

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SECTION 00 11 13 - ADVERTISEMENT FOR BIDS

Sealed bids for the construction of the KID 5400 South Water Line Replacement Phase 2 Project 25-01 for the Kearns Improvement District, will be received until 2:00 PM local time on Tuesday, June 24, 2025 at the Kearns Improvement District office (5350 W 5400 S, Kearns, UT 84118), at which time they will be publicly opened and read aloud.

DESCRIPTION OF WORK: The Work shall consist of all labor, equipment and materials required to properly construct the Project. The Project generally consists of the following primary components: Installation of 1,670 feet of 20-inch ductile iron pipe and appurtenances (in Zone B) along 5400 South from (Approximately 6100 West) to the District's property located at 6380 West 5400 South with pressure reducing and metering facilities as shown in the Project Drawings (Phase 2).

PRE-BID CONFERENCE: A Mandatory Pre-Bid Conference will be held for all prospective Bidders at the Kearns Improvement District office (5350 W 5400 S, Kearns, UT 84118), on Wednesday, June 18, 2025 at 2:00 PM, at which time the Owner's Representative, Bidders, and Subcontractors will discuss the project. Bidders are required to attend the pre-bid conference.

BIDDING REQUIREMENTS: Each Bid shall be accompanied by a Bidder's Bond executed by the Bidder as principal and by a surety company authorized to do business in the State of Utah, payable to the Kearns Improvement District, in a sum equal to five (5) percent of the full amount of the Bid. This is to serve as a guarantee that the Bidder will enter into a Contract within 15 days of Notice of Award in accordance with the terms of the principal's Bond and a contractor's Bond as required by law and the regulations and determinations of the governing board for the performances of such Work. Only Bids that are accompanied by such a Bond will be considered. Bidder must be licensed for the full amount of the Bid. No Bid will be read or considered which does not fully comply with the above provisions as to bond and license.

PROJECT ADMINISTRATION: All questions relative to this project prior to the opening of Bids shall be directed to the Engineer for the project.

Kearns Improvement District
Telephone: 801-912-0282

Email: jwoodruff@kidwater4ut.gov

Contact: 'Woody' James F. Woodruff, P.E.

It shall be understood, however, that no interpretations of the drawings or specifications will be made except in writing signed by the Engineer, nor will any "or equal" products be considered for approval prior to award of a contract.

OBTAINING BID DOCUMENTS: Electronic copies of Contract Documents may be obtained beginning Thursday, June 5, 2025, from the KID website at www.kidwater4ut.gov

OWNER'S RIGHTS RESERVED: All Bids will be made on the basis of cash payment for such Work. The Owner reserves the right to reject any or all Bids, waive any informalities in the Bids received, and further reserves the right to award the Contract in the best interest of the Owner. The Owner reserves the right to hold the three (3) lowest Bids for a period not to exceed thirty (30) days after the date of Bid opening.

Contractor may begin construction related activities after UDOT approval. The Work shall be substantially completed by July 30, 2026 and shall be completed and ready for final payment on or before August 27, 2026.

Dated this June 2, 2025.

By: James "Woody" Woodruff
District Engineer
Kearns Improvement District, Utah

END OF SECTION 00 11 13

SECTION 00 21 13 - INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.01 DESCRIPTION OF THE WORK

- A. The Work to be performed consists of furnishing and installing the equipment, facilities, services, and appurtenances thereto as included in the Contract Documents. A general description of the Work is set forth in the Advertisement for Bids (Document 00 11 13).
- B. General Conditions: as published in Section 00 72 00 from the EJCDC Standard General Conditions of Construction Contract.
- C. Supplementary Conditions: as published in Section 00 73 00 from EJCDC Standard Supplementary Conditions of the Construction Contract.

1.02 COPIES OF BID DOCUMENTS

- A. Bidders must use complete sets of Bid Documents in preparing Bids. Owner maintains a complete set on file at the address set forth in the Invitation to Bid, and bidders may review the file copy upon request during regular business hours. Bidders are solely responsible to verify whether their sets of Bid Documents are complete.
- B. Bid Documents are made available to bidders only for the purpose of obtaining Bids on the Work. No license or grant for any other use is given.
- C. Bidding Document copyrights shall remain with either the Owner or Engineer.
- D. All provisions of the Manual of Standard Specifications, 2017 Edition published by the Utah Chapter of the American Public Works Association that are applicable to the Work are hereby made a part of the Contract Documents by reference. The publications may be purchased separately from the Utah LTAP Center, Utah State University 4111 Old Main Hill, Logan UT 84322-4111.

1.03 PRE-BID CONFERENCE

- A. If a pre-bid conference is held, the time, place and nature of the conference will be stated in the Invitation to Bid. Representatives of Owner and Engineer will be present to discuss the Project. The Owner shall not be bound by any statements, representations, conclusions, or assumptions made by any party, whether oral or written, except for written statements that are issued in an Addendum by the Engineer to all prospective bidders.

1.04 PHYSICAL CONDITIONS

- A. In General: Prior to submitting a Bid, each Bidder is responsible to review all available explorations, tests and data concerning surface conditions, subsurface conditions and Underground Facilities at or contiguous to the site, or otherwise,

which may affect cost, progress, performance or furnishing of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

- B. Surface and Subsurface Conditions: Provisions concerning surface and subsurface conditions, if any, are set forth in a document titled Geotechnical Data (Document 02 32 00). The document provides the identification of:
 - 1. Those reports of explorations and tests of subsurface conditions at the site which have been utilized in preparing the Contract Documents; and
 - 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site which have been utilized in preparing the Contract Documents.
- C. Underground Facilities: Information and data indicated in the Contract Documents regarding Underground Facilities at or contiguous to the site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities. The Owner does not assume responsibility for the accuracy or completeness thereof other than as provided in paragraph 4.03.A of the General Conditions or unless expressly provided in the Supplemental General Conditions (Document 00 73 00).
- D. Additional Explorations and Tests: If feasible as determined by Owner, the Owner will provide each Bidder access to the site to conduct any explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall obtain permits, fill all holes, clean up and restore the site to its former condition upon completion of such explorations. By requesting such an exploration or test, Bidder agrees to release, indemnify, defend, and save the Owner harmless from all costs damages and liabilities an any kind whatsoever, including reasonable attorneys' fees, that may arise in connection with or as a result of the performance of such explorations or tests.

1.05 COMPENSATION AND QUANTITIES

- A. In General: The bid price for any lump sum or unit price contract includes all labor, materials, and incidental work to fully complete the Work in a satisfactory manner under the terms of the Contract Documents. Bidders are responsible to inform themselves of the character of the Work to be performed.
- B. Lump Sum Work: If the Work is to be paid for on a lump sum basis, the lump sum will be the only sum paid.

1.06 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A. In General: The Owner shall not be bound by any statements, representations, conclusions, or assumptions made by any party, whether oral or written, except for written statements that are issued in an Addendum.

- B. Access: The Contract Documents designate the site for performance of the Work. Bidder is responsible to investigate the site and understand all access requirements. All additional off site lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Bidder.
- C. Bidder's Obligations: In addition to Bidder's other responsibilities and obligations in connection with submitting a Bid, it is the responsibility of the Bidder before submitting a Bid, to:
1. Examine the Contract Documents thoroughly;
 2. Visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work;
 3. Investigate all applicable construction and labor conditions, quantities, and the character of the Work as they affect cost, progress, performance, or furnishing of the Work;
 4. Consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work;
 5. Study and carefully correlate Bidder's observations with the Contract Documents;
 6. Attend any pre-bid conference, which shall be mandatory if so designated in the Invitation to Bid;
 7. Review all available explorations and data concerning surface and subsurface conditions as set forth in Section 1.4 above; and
 8. Identify and notify Engineer in writing in the manner set forth in article 2.1 below of all specific conflicts, omissions, errors, or discrepancies in the Contract Documents, or if Bidder doubts their meanings.
- D. The failure or omission of any Bidder to take any of the foregoing actions shall not in any way relieve Bidder of its Bid, or its obligation to furnish all material, equipment, labor and services necessary to carry out the provisions of the Contract Documents and to complete the contemplated Work for the consideration set forth in its Bid. Submission of a Bid shall constitute prima facie evidence of compliance with these instructions.
- E. Deviations from the Terms of the Contract Documents: Owner will not accept any deviations whatsoever from the printed terms of the Agreement and the Contract Documents, except by Addendum or Change Order.

1.07 EFFECT OF SUBMITTING A BID

- A. Bidders are responsible to carefully examine the Contract Documents, visit the site, and fully inform themselves so as to include in the Bid a sum to cover the cost of all items. Bidder's failure or omission to receive or examine any form, instrument, addendum or other document, visit the site and become acquainted with existing conditions, or attend any pre-Bid Conference, shall in no way relieve Bidder from any obligations with respect to Bidder's Bid or the Construction Contract.
- B. By submitting a Bid, Bidder represents that Bidder has complied with all requirements of the Bid Documents; that the Bid is premised on properly performing and furnishing the Work required by the Contract Documents within the times specified; that the Bidder is informed of the conditions to be encountered and the character, quality and quantities of the Work; and that the Bidder believes the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- C. Submission of a Bid constitutes a promise that the Bidder will enter the Contract Documents in the form presented in the Contract Documents. Bidders should carefully examine all Contract Documents, including the required Bonds and insurance to be provided by the Bidder.
 - 1. The Performance Bond is a guarantee of faithful performance of the requirements of the Contract Documents, including all applicable warranties. The Payment Bond is a guarantee of payment of all labor, materials, or supplies used directly or indirectly in the prosecution of the Work provided in the Construction Documents.
 - 2. The sum of the Performance Bond and the Payment Bond shall be increased or decreased during the course of the Work in the event that Contract Modifications, Change Orders or Addenda increase or decrease the total contract price. The sum of each bond shall be in an amount equal to the completed contract price at the completion of the Work.
 - 3. Owner does not provide any release of Performance Bonds or Payment Bonds. The bonds are in effect throughout all periods during which a suit may be brought under the provisions of applicable law.
- D. By submitting a Bid, Bidder represents that the matters stated therein are true and correct.

PART 2 BIDDING PROCEDURES

2.01 INTERPRETATIONS AND ADDENDA

- A. All requests for interpretation of the Contract Documents shall be made in writing and delivered to the Owner or Engineer no later than seven (7) calendar days prior to opening of Bids. In the Owner's or Engineer's discretion, Owner or

Engineer will send the written interpretation to all persons receiving a set of Bid Documents in the form of an Addendum. If the Owner or Engineer does not respond to a Bidder's request for interpretation the Bidder shall comply with the intent and terms of the Contract Documents.

- B. No oral interpretations shall be made to any Bidder. The Owner shall not be responsible for or bound by any statements, interpretations, explanations, representations, conclusions or assumptions made by any party, whether oral or written, except for written statements that are issued in an Addendum by the Engineer to all prospective bidders.
- C. Each statement made in an Addendum is part of the Contract Documents at the location designated in the Addendum. A statement issued in an Addendum shall have the effect of modifying a portion of the Bid Documents when the statement in the Addendum specifies a particular section, paragraph or text and states that it is to be so modified. Only the specified section, paragraph or text shall be so modified, and all other portions of the Bid Documents shall remain in effect.
- D. Bidders shall acknowledge receipt of all Addenda in the space provided on the Bid Form.
- E. Except to postpone the Bid opening, no Addenda shall be issued within 48 hours of the Bid opening.

2.02 EQUIPMENT AND MATERIAL OPTIONS PRIOR TO BID OPENING

- A. If a Bidder or Supplier wishes to supply a product other than that identified in the Contract Documents, said Bidder or Supplier shall submit a written request for approval to the Owner or Engineer at least ten (10) calendar days prior to the date set for opening of bids.
- B. The procedure for submission of any such product option shall be as set forth in Article 6.4 of the General Conditions. It is the sole responsibility of the Bidder or Supplier to submit complete descriptive and technical information so that Owner or Engineer can make a proper appraisal.
- C. Owner or Engineer's failure to act upon such a request within five (5) days after receipt shall be deemed a denial thereof.
- D. Any such approval is at the sole discretion of the Owner or Engineer and will be in the form of an Addendum issued to all Bidder's holding Bid Documents indicating that the additional equipment or materials are approved as equal to those specified for the Project.
- E. The Construction Contract, if awarded, will be on the basis of materials and equipment specified in the Drawings and Specifications and any changes permitted in any Addenda.

2.03 BID SECURITY

- A. Amount of Bid Security: A Bid Security must accompany each Bid. The total amount of the Bid on which Bid security is to be based shall be the sum of all items of the Bid constituting the maximum amount of the possible award to the Bidder. The Bid Security amount must equal at least five (5) percent of the total amount of the Bid.
- B. Form of Bid Security: The Bid Security may be in the form of a certified check, cashier's check, cash, or Bid Bond. No other form of Bid Security will be accepted. A Bid Bond must be issued by a licensed Utah agency on behalf of a surety company licensed to do business in the State of Utah. A cashier's check must be drawn on a bank doing business in the State of Utah and made payable to Owner. If a cashier's check is used in lieu of a Bid Bond, or if the Bid Bond does not specifically so provide, a certificate from an approved surety company guaranteeing execution of performance and payment bonds in the full amount of the bid must accompany the bid.
- C. Purpose of Submission. By submitting a Bid Bond Bidder assures Owner it will take all steps necessary to properly execute the Contract Documents.
- D. Return of Bid Security: Owner will return Bid securities to Bidder within seven (7) days after award of the Construction Contract. Bid Bonds and cashier's checks of all Bidders will be held until the Construction Contract is awarded or all bids have been rejected. The liability of Owner in regards to the checks shall be limited only to the return of the checks.
- E. Default: In the event of failure or refusal of the Bidder to timely provide subcontractors and suppliers reports as provided herein or to enter into the Construction Contract and the delivery to the Owner a Performance Bond, Payment Bond and any other Bonds or documents required by the Contract Documents after Notice of Award by the Owner, the Bidder forfeits the sum of the Bid Bond or cashier's check as liquidated damages to the Owner.

2.04 COMPLETING BID DOCUMENTS

- A. The General Conditions identify all forms comprising the Bid Documents. Additional copies may be obtained from the Owner or Engineer. The Bidder shall make no stipulations or alterations on the Bid forms. The Bidder must use and execute only the Bid Form and Bid Schedules provided in the Contract Documents. The Bidder shall complete and submit the separate, unbound Bid Form, Document 00 41 43 and the Bid Bond, Document 00 43 13 provided.
- B. The Bidder must fill in all items in the Bid Form in ink or by typewriter. If applicable, furnish both the unit and total costs for each item. The total Bid price is the full price for the performance of all Work under the Contract Documents.

Bidder shall initial in ink any corrections, interlineations, alterations, or erasures made by the Bidder on Bidder's entries in the Bid Documents.

- C. Any work or material which is specified in the Contract Documents or which is necessary because of the nature of the Work, but which is not listed separately in the Bid Schedule shall not be measured or paid for separately. The cost of such work or material shall be considered as included in the Contract Price.
- D. Bids by corporations must be executed in the corporate name by a corporate officer authorized to sign, and must be properly attested to as an official act of the corporation. At the Owner's request, authority to sign shall be submitted.
- E. Bids by partnerships, joint ventures, or limited liability companies must be executed in the partnership, joint venture, or limited liability company name and signed by a partner, joint venturer, or manager whose title and official address must be shown. If a partnership, joint venture, or limited liability company is the low bidder, the partnership, joint venture, or limited liability company must also submit evidence to the Owner of the responsibility of the partnership, joint venture, or limited liability company as a bidder in the manner directed by the Engineer.
- F. Where the Bidder is wholly owned subsidiary of another company, the Bid must so state, and the owner or parent corporation also must agree to sign and be bound with the Bidder.
- G. All names must be typed or printed under or near the signature. Signatures shall be in longhand.
- H. The Bid shall contain an acknowledgment of receipt of all Addenda. The Addenda numbers must be filled in on the Bid Form.
- I. The Bidder's address, telephone number, and facsimile number for communications regarding the Bid must be shown on the first page of the Bid Form.
- J. The divisions and sections of the specifications, and the identifications of any Drawings, shall not control Bidder in dividing the Work among subcontractors or suppliers, or delineating the Work to be performed by any specific trade.
- K. The base Bid and alternates shall include all Work required to be performed by the Contract Documents.

2.05 CONFLICT OF INTEREST, SUBCONTRACTORS

- A. Conflict of interest pertaining to Subcontractors is described in paragraph 6.5H of the General Conditions.
- B. Bidder shall not subcontract more than 50 percent of the dollar value of the total contemplated Work (exclusive of the supply of materials and equipment to be incorporated in the Work) without Owner's prior written approval.

- C. The following firms have been under contract to the Owner in the design phase of the Work. They shall not be used as subcontractors by the Contractor.

- 1. Advanced Engineering and Environmental Services, LLC.

2.06 SUBMISSION OF BIDS

- A. Bids shall be submitted at the time and place indicated in the Invitation to Bid and should be enclosed in a sealed envelope, marked with the Construction Contract name and number, the name and address of the Bidder, and the date and the opening time for Bids. If the Bid is sent through the mail or other delivery system the sealed envelope should be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it. It is the sole responsibility of the Bidder to deliver the Bid before the scheduled time. Bids received after due date and time will not be accepted.
- B. Bidder will make no recapitulations, stipulations, alterations, alternate submissions, or modifications in any manner to any of the Contract Documents.
- C. Bidder must submit a Bid by completing all of the Bid Form documents, which are:
 - 1. The Bid portion of the Bid Form which is included in these Contract Documents, which shall be in the form of a lump sum, or in the form of unit pricing pursuant to the Bid Schedule, as called for in the Bid Form.
 - 2. The Bid Security.
 - 3. Contractor's License or Certificate of Renewal in the State of Utah
- D. Alternate bids, other than those called for in the Bid Form, will not be considered.
 - 1. No oral, telegraphic, telephonic, facsimile or modified bids will be considered.

2.07 MODIFICATION AND WITHDRAWAL OF BIDS

- A. At any time prior to the opening of Bids, Bids may be modified or withdrawn if a written notice of modification or withdrawal is signed by Bidder and delivered to the place where Bids are to be submitted. Bid Security will be returned upon proper withdrawal of a Bid prior to the time for Bid opening.
- B. Within 24 hours after Bids are opened, any Bidder may file written notice with Owner that there was a substantial mistake made in the preparation of its Bid. Bidder must thereafter promptly demonstrate Bidder's mistake. The Owner has sole discretion to determine whether to permit any modification or withdrawal or the return of any Bid Security.
- C. When it appears a mistake has been made, or when the Owner desires an assurance of any matter, the Owner may request a Bidder to confirm the Bid in writing.

2.08 OPENING OF BIDS

- A. Bids will be opened and read aloud publicly unless obviously nonresponsive. An abstract of the amounts of the base schedule of prices and any alternate schedules will be made available for review after the opening of Bids.
- B. Any Bids received after the time specified in the Invitation to Bid will be returned unopened.

2.09 BIDS SUBJECT TO ACCEPTANCE FOR 30 DAYS

- A. All bids remain subject to acceptance for 30 days after the day of the Bid opening. Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

PART 3 EVALUATION AND AWARD

3.01 EVALUATION OF BIDS

- A. Owner reserves the right to reject any and all Bids or any part thereof; to award, any, all, or any number of Bid Schedule(s); to waive any informalities in the Bid Schedule(s) and elsewhere; to negotiate and agree to contract terms with the successful Bidder; to disregard nonconforming, nonresponsive, unbalanced or conditional Bids; and to withhold the award for any reason deemed in the best interests of the Owner, as solely determined by Owner.
- B. Owner reserves the right to reject any Bid if Owner believes that it would not be in the best interest of the Project or the Owner. Without limitation, such rejection may be because the Bid is not responsive, or the Bidder is unqualified or of doubtful ability or the Bid or Bidder fails to meet any other pertinent standard or criteria established by Owner, as solely determined by Owner.
- C. Owner will evaluate and consider selecting the Contractor based upon the Bid Price and the following information which Owner believes is relevant when evaluating a Bid, including, without limitation:
 - 1. The Contractor's overall bid price submitted will count for 80% of the overall selection.
 - 2. The qualifications and experience of the Bidder with experience with large diameter (12 inch and larger) ductile water line pipe installations. Contractor will submit a list of projects successfully completed and references (contacts and phone numbers). This portion will count for 15% of the overall selection.
 - 3. The qualifications and experience of the Bidder with experience permitting and working within UDOT right-of-way roadway projects. Contractor will need to submit a list of projects and their locations successfully completed within UDOT right-of-way. This will count for 15% of the overall selection.
 - 4. Proper licensing to do the Work in compliance with licensing laws of the State of Utah for contractors and subcontractors.

5. All other relevant matters, consistent with Owner's procurement code and administrative rules, Owner's ordinances and program policies.
- D. To establish qualifications of Bidder, Owner may request such data indicated in the Bid Documents, conduct such investigations as Owner deems appropriate, and consider any other information (whether obtained from the Bid, the Bidder, or any other source).
- E. If the Construction Contract is to be awarded, it will be awarded to the most responsive, qualified based up the selection criteria, and responsible Bidder as determined by the Owner. Alternates may be accepted depending upon availability of Owner's funds and as determined by the OWNER. Accepted alternates will be considered in determining the most responsive, qualified, and responsible Bidder.
- F. Bid Schedules will be evaluated as follows:
 1. Bidders must use complete sets of Bid Documents in preparing Bids. Owner maintains a complete set on file at the address set forth in the Invitation to Bid, and bidders may review the file copy upon request during regular business hours. Bidders are solely responsible to verify whether their sets of Bid Documents are complete.
 2. Prices written out in words shall govern over prices written out in numbers.
 3. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
 4. Bids shall not contain any recapitulations of or changes in the work to be done.
- G. The Owner, in the Owner's sole discretion, shall make determinations as to disqualification of Bidders or rejection of Bids. Such matters may include, without limitation, submission of more than one Bid by the Bidder (whether under the same or different names); evidence of collusion among Bidders; other commitments of Bidder which, in the Owner's sole judgment, might hinder the Work; previous defaults, Bid irregularities when not waived in the best interests of the Owner, delays or poor performance by Bidder on any project; official action against Bidder; and any other cause which, in the Owner's sole discretion and judgment, is sufficient to justify disqualification of a Bidder or rejection of a Bid.
- H. If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.

3.02 ADJUSTMENTS TO THE COST OF THE WORK AFTER OPENING OF BIDS

- A. The Contract Price identified in the Agreement represents the cost of the work which is to be paid by the Owner to the Contractor.
- B. Adjustments to the Contract Price which are agreed to between the Owner and the successful Bidder shall be effected by signing an Agreement Supplement.

3.03 SUBSTITUTIONS

- A. The Construction Contract, if awarded, will be on the basis of materials and equipment described in the Drawings, Specifications and any Addenda.
- B. After the Effective Date of the Construction Contract, the procedure for submitting an application for substitution is set forth in Article 6.4 of the General Conditions.

3.04 SUBMITTALS REQUIRED FOR AWARD OF CONTRACT

- A. Requirements as to performance and payment Bonds are as set forth in the Bid Security Form (Document 00 43 13).
 - 1. The form of the Bonds should be carefully examined by the Bidder.
 - 2. When the successful Bidder delivers the executed Construction Contract to Owner, it must be accompanied by the required Performance and Payment Bonds.
- B. When a determination has been made to award the Construction Contract, Bidder is required, prior to the award or after the award, or both, to furnish such other information as the Engineer requests.

3.05 SIGNING OF AGREEMENT

- A. Within 10 working days after Owner gives Notice of Award the Construction Contract to the successful Bidder, the Bidder shall pick up, sign and return to Owner, the required number of copies of the Construction Contract, bonds and insurance. A minimum of two (2) originals will be signed and returned to the Owner. One executed original will be returned to the Bidder. Bidder shall comply with all execution requirements.
- B. All of Bidder's executions and submittals must be delivered to the Owner before Owner will execute the Construction Contract. The Construction Contract will not be deemed awarded and shall not be binding on the Owner until it has been approved and executed by the Owner, and a fully executed copy is formally delivered to the Contractor. The Owner reserves the right to rescind its Notice of Award without liability, except for the return of Bidder's Bid Security, at any time before the Construction Contract has been fully executed by all parties and delivered to the Contractor.
- C. Transfers, delegations or assignments of interests in the Contract Documents are prohibited, unless prior written authorization is received from the Owner.

- D. At the time of Bidding, and the signing of the Agreement, and at all times during the Work, Bidder shall be properly licensed to do the Work and shall be in compliance with the license laws of the State of Utah. The Bidder shall also require all Subcontractors to do the same.
- E. If a Bidder fails to fully and properly execute the Construction Contract and provide all submittals required therewith within ten (10) days after the date of the Notice of Award, the Owner may elect to rescind the Notice of Award, and the Owner shall be entitled to the full amount of Bidder's Bid Security, not as a penalty, but in liquidation of and compensation for damages sustained. In the Owner's sole discretion, a Notice of Award may then be provided to another bidder whose Bid is most advantageous to the Owner, price and other factors considered.

END OF SECTION 00 21 13

SECTION 00 26 00 - PROCUREMENT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. This section defines the procedures for proposing substitute items by "Prior Approved Equivalent" manufacturers not listed in the specifications.
- B. Acceptance of "Prior Approved Equivalent" manufacturers will be done by addendum to the bidding documents prior to bid date and time.

1.02 QUALIFICATIONS PACKAGE FOR NON-LISTED "PRIOR APPROVED EQUIVALENT" PRODUCT CONSIDERATION

- A. Bidders shall submit a qualification package at least fourteen (14) days prior to the date of receipt of bids for each proposed "Prior Approved Equivalent" manufacturer not already listed as an acceptable or approved "manufacturer" in the specifications, which the Bidder proposes to furnish. Each qualification package shall be bound with protective cover, identified by specification section number and title, and the product manufacturer's name. The Bidder shall submit all qualification packages in a sealed, sturdy box or suitable container.
- B. Qualification packages for non-listed "Prior Approved Equivalent" items shall include the following: (if an item does not apply, indicate so in the submittal):
 - 1. Completed Substitution Request Form. A copy of which can be found attached to the end of this section.
 - 2. A complete set of drawings, specifications, catalog cut-sheets, and detailed descriptive material. This information shall identify all technical and performance requirements stipulated on each drawing and in each specification section. Include all items required for shop drawing review.
 - 3. Provide marked-up product information showing side by side comparisons for both the specified products and proposed products.
 - 4. Detailed information for all buy-out items such as hardware, motors, bearings, reducers, belts, sheaves, motor controllers and instrumentation.
 - 5. Lists showing materials of construction of all components, including all buy-out items.
 - 6. Manufacturer's recommended spare parts, including all buy-out items.
 - 7. Information on equipment field erection requirements including total weight of assembled components and weight of each sub-assembly.
 - 8. A maintenance schedule showing the required maintenance, frequency of maintenance, lubricants and other items required at each regular preventative maintenance period, including all buy-out items.
 - 9. Electrical requirements and schematic diagrams.
 - 10. Detailed written documentation with discussion of all deviations of equipment, including buy-out items, from the Contract Documents.

11. A list of all process, mechanical, electrical, and structural changes and requirements for incorporating the "Prior Approved Equivalent" into the project.
 12. A listing of the manufacturer's history. Unless specified otherwise in applicable specification sections, manufacturer's history is to demonstrate a minimum of three (3) years experience and a minimum of three (3) successful installations of the size and complexity involved in this project.
 13. Provide a complete installation list with contact names and telephone numbers.
 14. Documentation easily identifying that the proposed substitution meets or exceeds the specified warranties.
- C. Failure to furnish the preceding information at least fifteen (15) days prior to the date of receipt of bids shall be cause for rejection of a proposed alternate item for use on this project.
- D. No "Prior Approved Equivalent" items will be considered unless, in the opinion of the Architect or Engineer, they conform to the Contract Documents in all respects, except for make and manufacturer and minor details.
- E. The Architect or Engineer shall be the sole authority for determining conformance of a proposed "Prior Approved Equivalent" item with the Contract Documents. Except for identification of non-compliance with the specifications, the Engineer will not be required to prove that a "Prior Approved Equivalent" item is not equal to "Basis of Bid" items.
- F. Substitutions or modifications to the qualification package will not be considered after opening of Bids.
- G. Acceptance of "Prior Approved Equivalent" items and their qualification packages, does not eliminate the need for shop drawing submittals and reviews during construction, nor does it eliminate the requirement that the seller satisfy the requirements of the Contract Documents.

1.03 BID REQUIREMENTS

- A. Bidders proposing to furnish "Prior Approved Equivalent" items that require changes to the Contract Documents shall notify the Engineer in writing of all process, mechanical, electrical and structural changes and requirements for incorporating the "Prior Approved Equivalent" into the Project and shall reimburse the Owner for associated redesign costs. Redesign and contract drawing revisions to accommodate the "Prior Approved Equivalent" will be prepared by the Engineer during the shop drawing review process. Reimbursement shall be based on the Engineer's standard hourly rates plus reimbursable expenses at cost.

PART 2 PRODUCTS

2.01 NOT USED.

PART 3 EXECUTION

3.01 NOT USED

END OF SECTION 00 26 00

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SECTION 00 26 00 - PROCUREMENT SUBSTITUTION REQUEST FORM

Engineer's Project No: P14286-2022-005 Date: _____

Project Name: KID 5400 South Water Line Replacement (Phase 1)

Specification Section	Manufacturer Specified	Proposed Manufacturer

Indicate drawing sheet name in lieu of specification section where applicable.

Vendor/Supplier

Name: _____

Address: _____

Contact: _____ E-Mail: _____

Telephone: _____ Fax: _____

Reason for Substitution: _____

Does Specification Allow for Substitutions of Proposed Items? Yes: _____ No: _____

Will the Substitution Provide Cost Savings to the Owner? Yes: _____ No: _____

Are Proposed Substitutions Equivalent/Superior to those Specified? Yes: _____ No: _____

Did you submit a complete qualification package as described in Part 1.02.B of Section 00 26 00 with this form? Yes: _____ No: _____

I, _____, accept responsibility for coordination of proposed substitution and accept all additional costs resulting from the incorporation of proposed substitution into the Project. (Proposers Signature Required)

For Architect/Engineer's Use:.....	Comments: _____
------------------------------------	-----------------

Accepted: _____ Not Accepted: _____	
-------------------------------------	--

No Action Required: _____	
---------------------------	--

Submission: Incomplete: ____ Too Late: ____	
---	--

Reviewed By: _____	
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SECTION 00 41 00 - BID FORM

PROJECT IDENTIFICATION:

KID 5400 South Water Line Replacement
Kearns Improvement District
Kearns, Utah

THIS BID IS SUBMITTED TO:

Kearns Improvement District
5350 W 5400 S
Kearns, UT 84118

- 1.01. 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.
- 1.02. Bidder accepts all of the terms and conditions of the Advertisement for Bids and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for thirty (30) days after the day of Bid opening. Bidder will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen (15) days after the date of Owner's Notice of Award.
- 1.03. In submitting this Bid, Bidder represents, as set forth in the Agreement, that:
- A. Bidder examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged:

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

- B. Bidder examined and carefully studied any and/or all Allowances and Pre-Negotiated Prices to be included in the Base Bid or respective Alternative.

- C. Bidder has visited the Site 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.
- D. Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- E. The undersigned Bidder hereby expressly acknowledges his understanding of his agreement to comply during the performance of any work under any contract resulting from this Bid with all equal opportunity obligations as set forth in 40 CFR Part 8 and 41 CFR Parts 60-1 and 60-4.
- F. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 5.03 of the General Conditions; (2) reports and drawings of a Hazardous Environmental Condition, if any, which have been identified in the Supplementary Conditions as provided in paragraph 5.06 of the General Conditions.
- G. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, or performance the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, and safety precautions and programs incident thereto.
- H. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with other terms and conditions of the Bidding Documents.
- I. Bidder is aware of the general nature of Work to be performed by Owner and others at the Site that relates to Work as indicated in the Bidding Documents.
- J. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in

the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

K. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and the written resolution thereof by Engineer is acceptable to Bidder.

L. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

1.04. Bidder further represents that 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 agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

1.05. Bidder will complete the Work, whether specifically listed on the BID FORM, shown on the Drawings, or described in the Specifications, in accordance with the Contract Documents for the following unit price(s):

A. Base Bid: (Schedule A) See Drawings for KID 5400 South Water Line (Phase 2)

Item No.	Bid Item	Unit	Quantity	Unit Cost	Total Cost
A.1	Bonding	LS	1	\$ -	\$ -
A.2	Mobilization	LS	1	\$ -	\$ -
A.3	Traffic Control	LS	1	\$ -	\$ -
A.4	Permitting	LS	1	\$ -	\$ -
A.5	Construction Surveying	LS	1	\$ -	\$ -
A.6	Temporary Controls	LS	1	\$ -	\$ -
A.7	Quality Control	LS	1	\$ -	\$ -
A.8	20-inch DI Pipe	LF	1667	\$ -	\$ -
A.9	20-inch Butterfly Valves	EA	3	\$ -	\$ -
A.10	North Tank Connection	LS	1	\$ -	\$ -
A.11	Tank Isolation Assembly	LS	1	\$ -	\$ -
A.12	Meter assembly and PS connection	LS	1	\$ -	\$ -
A.13	PRV assembly & Zone C connection	LS	1	\$ -	\$ -
A.14	6-inch PVC drainage pipe	LF	125	\$ -	\$ -
A.15	Retaining wall (excl. material)	LS	1	\$ -	\$ -
A.16	Abandon pipe	LS	1	\$ -	\$ -
A.17	Asphalt restoration	TN	760	\$ -	\$ -
A.18	Concrete restoration	LS	1	\$ -	\$ -
A.19	Striping restoration	LS	1	\$ -	\$ -
A.20	Site restoration (KID property)	LS	1	\$ -	\$ -
Total for Bid Schedule A					\$ -

- 1.06. OWNER reserves the right to award the Base Bid (Schedule A only) or award portions of the bid schedule based upon the UDOT requirements.
- 1.07. Bidder agrees that the Work will be substantially complete on or before July 30, 2026 and ready for final payment in accordance with paragraph 15.06 of the General Conditions by August 27, 2026.
- 1.08. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above in Article 6.01, and to pay OWNER specified liquidated damages as indicated in the Agreement.
- 1.09. The following documents are attached to and made a condition of this Bid:
 - A. Bid Security (See Section 00 43 13).
 - B. Completed Bid Form (See Section 00 41 00).
 - C. Contractor's License or Certificate of Renewal in the State of Utah.
 - D. Non-Collusion Affidavit (See Section 00 45 19).
- 1.10. The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

SUBMITTED on _____, 2025.

If Bidder is:

A Corporation

Corporation Name:

State of Incorporation:

Type (General Business, Professional, Service, Limited Liability):

By:

(Signature)

Name (typed or printed):

Title:

Attest:

(Signature)

Business Address:

Phone No.:

Fax No.:

Date of Qualification to do business is:

A Partnership

Partnership Name:

By:

(Signature of General Partner)

Name (typed or printed):

Business Address:

Phone No.:

Fax No.:

An Individual

Name (typed or printed): _____

By:

(Individuals Signature)

Doing business as:

Business Address:

Phone No.:

Fax No.:

A Joint Venture

Joint Venture Name:

By:

(Signature of Joint Venture Partner)

Name (typed or printed):

Title:

Business Address:

Phone No.:

Fax No.:

Joint Venture Name:

By:

(Signature of Joint Venture Partner)

Name (typed or printed):

Title:

Business Address:

Phone No.:

Fax No.:

(Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above).

END OF SECTION 00 41 00

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SECTION 00 43 13 - BID SECURITY FORM

BIDDER (Name and Address):

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

OWNER (Name and Address):

BID

BID DUE DATE: _____

PROJECT (Brief Description Including Location):

BOND

BOND NUMBER: _____

DATE (Not later than Bid due date): _____

PENAL SUM: _____ (Words) _____ (Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature and Title

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Attest: _____
Signature and Title

Note: (1) Above addresses are to be used for giving required notice.
(2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

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 by 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 and 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 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 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 or Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer or proposal as applicable.

SECTION 00 45 19 - NON-COLLUSION AFFIDAVIT

STATE OF _____

COUNTY OF _____

I hereby swear (affirm) under penalty or perjury:

- 1 That I am the Bidder (if Bidder is an individual), a partner in the Bidder (if Bidder is a partnership), or an officer or employee of the Bidder (if Bidder is a corporation) having authority to sign on its behalf;
- 2 That the attached Bid or Bids have been arrived at by the Bidder individually and have been submitted without collusion with, and without any agreement, understanding or planned common course or action with any vendor of materials, suppliers, equipment, or services described in the invitation to bid designed to limit individual bidding or competition;
- 3 That the contents of this Bid or Bids have not been communicated by Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished with the Bid or Bids, and will not be communicated to any such person, prior to any official opening of the Bid or Bids; and
- 4 That I have fully informed myself regarding the accuracy of the statements made in this affidavit.

_____ Signature of Bidder		Subscribed and sworn before me this _____ day of _____ 20____
_____ Position		_____ Notary
_____ Company Name		
_____ Date		(seal)

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SECTION 00 51 00 - NOTICE OF AWARD

DATE: _____

TO: _____
(Contractor)

ADDRESS: _____

PROJECT: KID 5400 South Water Line Replacement Phase 2

CONTRACT
FOR: _____

You are notified that your Bid dated _____ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a contract for all work under the above referenced project.

The Contract Price of your contract is _____

Four (4) copies of the proposed Agreement accompany this Notice of Award.

You must comply with the following conditions precedent within fifteen (15) days of the date of this Notice of Award, that is by _____.

1. You must deliver to the Owner any remaining information requested by Engineer or otherwise identified in the Information of Bidders.
2. You must deliver with each executed Agreement, Performance and Payment Bonds as specified in the Instructions for Bidders (Section 00 21 13).
3. You must deliver with each executed Agreement, Certificates of Insurance as specified in the Instructions for Bidders (Section 00 21 13).

After execution of the Agreement, please send all copies of the Contract, along with the above items to the Engineer, **Kearns Improvement District**, 5350 West 5400 South, Kearns, UT 84119.

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

Within fifteen (15) days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

Kearns Improvement District

Owner

By: _____
Authorized Signature

ACCEPTANCE OF AWARD

Contractor

By: _____

Title: _____

Date: _____

END OF SECTION 00 51 00

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SECTION 00 52 00 - AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____ in the year _____ by and between the Kearns Improvement District ("Owner") and _____ ("Contractor").

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 1,670 feet of 20-inch ductile iron pipe and appurtenances (in Zone B) along 5400 South from Phase 1 (Approximately 6100 West) to the District's property located at 6380 West 5400 South with pressure reducing and metering facilities as shown in the Project Drawings (Phase 2).

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

KID 5400 South Water Line Phase 2, City of Kearns, UT

ARTICLE 3 - THE ENGINEER

3.01 The Project has been designed by Advanced Engineering and Environmental Services, LLC who is hereinafter called Engineer and who is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 *Time of 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 the essence of the Contract.

4.02 *Days to Achieve Substantial Completion and Final Payment*

- A. The Work associated with the Base Bid shall be substantially completed on or before July 30, 2026 and completed and ready for final payment in accordance with paragraph 15.06 of the General Conditions on or before August 27, 2026.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as state in paragraph 4.01 of the Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. 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), Contractor shall pay Owner \$500 for each day that expires after the time specified in paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining of the Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$250 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

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 Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

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

- A. For all Work, at the prices stated in the Contractor's Bid, attached hereto as an exhibit.

(\$ _____)
(use figures)

ARTICLE 6 - PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the 5th 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. Ninety-five (95) percent of the value of the Work completed (with the balance being retainage).
 - 1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. Eighty (80) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
 - 2. 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 100 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.

- 6.04 All moneys not paid when due as provided in Article [15] of the General Conditions shall bear interest at the maximum rate allowed by law at the place of the Project.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

7.01 In order to induce Owner to enter into this Agreement Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied 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 federal, state, and local Laws and Regulations that may affect cost, progress, and performance for the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 5.03 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in paragraph 5.06 of the General Conditions.
- E. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of the construction to be employed by Contractor, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by Contractor, and safety precautions and programs incident thereto
- F. Contractor does not consider that any further examinations, investigations, explorations, test, 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 Documents.
- 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 correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in

the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

- I. 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.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

8.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement
 - 2. Performance Bond;
 - 3. Payment Bond;
 - 4. General Conditions
 - 5. Supplementary Conditions
 - 6. Specifications as listed in the table of contents of the Project Manual;
 - 7. Drawings consisting of a cover sheet and sheets numbered (with each sheet bearing the following general title: KID 5400 South Water Line Phase 2), Kearns Improvement District);
 - 8. Addenda
 - 9. Notice of Award;
 - 10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed;
 - b. Written Amendments;
 - c. Work Change Directives;
 - d. Change Order(s).
- B. The documents listed in paragraphs 8.01.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 8.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Article 11 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

9.01 Terms

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

9.02 Assignment of Contract

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

9.03 *Successors and Assigns*

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

9.04 *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.

9.05 *Contractor's Certifications*

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

IN WITNESS WHEREOF, Owner AND Contractor have signed this Agreement in duplicate. One (1) counterpart each has been delivered to Owner and Contractor. All

portions of the Contract Documents have been signed or identified by Owner and Contractor or on their behalf.

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

OWNER:	CONTRACTOR:
_____	_____
By: _____	By: _____
Attest: _____	Attest: _____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____
Designated Representative:	Designated Representative:
Name: _____	Name: _____
Title: _____	Title: _____
Address: _____	Address: _____
_____	_____
_____	_____
Phone: _____	Phone: _____
Facsimile: _____	Facsimile: _____
E-mail: _____	E-mail: _____

END OF SECTION 00 52 00

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SECTION 00 55 00 - NOTICE TO PROCEED

DATE:	
TO:	
ADDRESS:	
CONTRACT:	Contract No. 1 - KID 5400 South Water Line Phase 2
PROJECT:	KID 5400 South Water Line Phase 2, Project 25-01
You are hereby notified to commence WORK in accordance with the Agreement dated _____.	
You are to have all WORK completed and ready for final payment on or before _____.	
	_____ <i>Owner</i>
By:	_____ <i>Authorized Signature</i>
	_____ <i>Title</i>
ACCEPTANCE OF NOTICE: Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:	
_____ <i>Contractor</i>	
_____ <i>Authorized Signature</i>	
_____ <i>Title</i>	
Date: _____	
Copy to ENGINEER FRM (Use Certified Mail, Return Receipt Requested)	

END OF SECTION 00 55 00

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SECTION 00 62 76
APPLICATION FOR PAYMENT

SEE ATTACHED FORM

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Contractor's Application for Payment No.

Application Period:		Application Date:
To (Owner):	From (Contractor):	Via (Engineer):
Project:	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

**Application For Payment
Change Order Summary**

Approved Change Orders		
Number	Additions	Deductions
TOTALS		
NET CHANGE BY CHANGE ORDERS		

1. ORIGINAL CONTRACT PRICE.....	\$	_____
2. Net change by Change Orders.....	\$	_____
3. Current Contract Price (Line 1 ± 2).....	\$	_____
4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates).....	\$	_____
5. RETAINAGE:		
a. X _____ Work Completed.....	\$	_____
b. X _____ Stored Material.....	\$	_____
c. Total Retainage (Line 5.a + Line 5.b).....	\$	_____
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c).....	\$	_____
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application).....	\$	_____
8. AMOUNT DUE THIS APPLICATION.....	\$	_____
9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above).....	\$	_____

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:
 (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 the Work covered by prior Applications for Payment;
 (2) Title to 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 the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor Signature

By:	Date:
-----	-------

Payment of: \$ _____
 (Line 8 or other - attach explanation of the other amount)

is recommended by: _____
 (Engineer) (Date)

Payment of: \$ _____
 (Line 8 or other - attach explanation of the other amount)

is approved by: _____
 (Owner) (Date)

Approved by: _____
 Funding or Financing Entity (if applicable) (Date)

Progress Estimate – Lump Sum Work

Contractor's Application

For (Contract):					Application Number:			
Application Period:					Application Date:			
		B	Work Completed		E	F		G
A		B	C	D	Materials Presently Stored (not in C or D)	Total Completed and Stored to Date (C + D + E)	% (F / B)	Balance to Finish (B - F)
Specification Section No.	Description	Scheduled Value (\$)	From Previous Application (C+D)	This Period				
	Totals							

Progress Estimate – Unit Price Work

Contractor's Application

[illegible]

SECTION 00 63 13
REQUEST FOR INFORMATION FORM

SUBMITTED TO: AKEARNS IMPROVEMENT DISTRICT(5350 W. 5400 S., KEARNS,
UT, 84419)

DATE: _____

FROM: _____

ATTENTION TO: _____

TEL/FAX: _____

CC: _____

RFI #: _____

RFI SUBJECT: _____

SPEC. REFERENCED: _____

PROJECT:

KID 5400 SOUTH WATER LINE PHASE 2 PROJECT 25-01

INFORMATION REQUESTED:

RESPONSE:

END OF SECTION 00 63 13

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SECTION 00 63 49 - WORK CHANGE DIRECTIVE FORM

No. _____

DATE OF ISSUANCE _____

EFFECTIVE DATE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____ ENGINEER's Project No. _____

You are directed to proceed promptly with the following change(s):

Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in

Contract Price:

☐ Unit Prices

☐ Lump Sum

☐ Cost of the Work _____

Estimated increase (decrease) in Contract Price:

\$ _____.

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract Times:

Substantial Completion: _____ days;

Ready for final payment: _____ days.

RECOMMENDED:

AUTHORIZED:

ENGINEER

By: _____

OWNER

By: _____

Other than the change in contract price shown above, Contractor shall not make any additional claims related in any way, shape, or form to this work change directive.

WORK CHANGE DIRECTIVE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a change in the Contract Price or the Contract Times a Field Order should be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated time is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed and signed the form, all copies should be sent to Owner for authorization because Engineer alone does not have authority to authorize changes in Price or Times. Once authorized by Owner, a copy should be sent by Engineer to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor with Engineer's recommendation.

Paragraph 10.03.A.2 of the General Conditions requires that a Change Order be initiated and processed to cover any undisputed sum or amount of time for Work actually performed pursuant to this Work Change Directive.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

END OF SECTION

SECTION 00 63 63
CHANGE ORDERS

SEE ATTACHED FORM

Change Order No. _____

Date of Issuance:
Owner:
Engineer:
Project:

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

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:
By: _____ _____ Engineer (if required)	By: _____ _____ Owner (Authorized)
Title: _____	Title: _____
Date: _____	Date: _____

SECTION 00 65 16 - CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE OF ISSUANCE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____ ENGINEER's Project No. _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To _____
OWNER

And To _____
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

OWNER: _____

CONTRACTOR: _____

The following documents are attached to and made a part of this Certificate:

[For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.]

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 Documents.

Executed by ENGINEER on _____
Date

ENGINEER

By: _____
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____ (date).

CONTRACTOR

By: _____
(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on _____
Date

OWNER

By: _____
(Authorized Signature)

END OF SECTION

SECTION 00 72 00
GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

- 1.01 THE GENERAL CONDITIONS APPLICABLE TO THIS CONTRACT IS ATTACHED
FOLLOWING THIS PAGE.

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

	Page
Article 1—Definitions and Terminology	1
1.01 Defined Terms	1
1.02 Terminology.....	5
Article 2—Preliminary Matters	6
2.01 Delivery of Performance and Payment Bonds; Evidence of Insurance	6
2.02 Copies of Documents	7
2.03 Before Starting Construction	7
2.04 Preconstruction Conference; Designation of Authorized Representatives.....	7
2.05 Acceptance of Schedules	7
2.06 Electronic Transmittals	8
Article 3—Contract Documents: Intent, Requirements, Reuse	8
3.01 Intent	8
3.02 Reference Standards	9
3.03 Reporting and Resolving Discrepancies	9
3.04 Requirements of the Contract Documents.....	10
3.05 Reuse of Documents.....	10
Article 4—Commencement and Progress of the Work.....	11
4.01 Commencement of Contract Times; Notice to Proceed	11
4.02 Starting the Work.....	11
4.03 Reference Points.....	11
4.04 Progress Schedule.....	12
4.05 Delays in Contractor’s Progress	11
Article 5—Site; Subsurface and Physical Conditions; Hazardous Environmental Conditions	13
5.01 Availability of Lands	13
5.02 Use of Site and Other Areas	13
5.03 Subsurface and Physical Conditions.....	14

5.04	Differing Subsurface or Physical Conditions	15
5.05	Underground Facilities	16
5.06	Hazardous Environmental Conditions at Site.....	18
Article 6—Bonds and Insurance.....		20
6.01	Performance, Payment, and Other Bonds.....	20
6.02	Insurance—General Provisions.....	21
6.03	Contractor’s Insurance	23
6.04	Builder’s Risk and Other Property Insurance.....	23
6.05	Property Losses; Subrogation	24
6.06	Receipt and Application of Property Insurance Proceeds	25
Article 7—Contractor’s Responsibilities		26
7.01	Contractor’s Means and Methods of Construction.....	26
7.02	Supervision and Superintendence	26
7.03	Labor; Working Hours	26
7.04	Services, Materials, and Equipment	26
7.05	“Or Equals”	27
7.06	Substitutes.....	28
7.07	Concerning Subcontractors and Suppliers.....	29
7.08	Patent Fees and Royalties.....	30
7.09	Permits	31
7.10	Taxes.....	31
7.11	Laws and Regulations.....	31
7.12	Record Documents	32
7.13	Safety and Protection	32
7.14	Hazard Communication Programs	33
7.15	Emergencies	33
7.16	Submittals.....	33
7.17	Contractor’s General Warranty and Guarantee	36
7.18	Indemnification.....	37
7.19	Delegation of Professional Design Services	37
Article 8—Other Work at the Site		38
8.01	Other Work.....	38
8.02	Coordination.....	39
8.03	Legal Relationships	39
Article 9—Owner’s Responsibilities		40
9.01	Communications to Contractor	40
9.02	Replacement of Engineer.....	40
9.03	Furnish Data.....	40
9.04	Pay When Due	40
9.05	Lands and Easements; Reports, Tests, and Drawings	40
9.06	Insurance	40
9.07	Change Orders.....	40
9.08	Inspections, Tests, and Approvals.....	40

9.09	Limitations on Owner's Responsibilities	40
9.10	Undisclosed Hazardous Environmental Condition	41
9.11	Evidence of Financial Arrangements	41
9.12	Safety Programs	41
Article 10—Engineer's Status During Construction		41
10.01	Owner's Representative	41
10.02	Visits to Site	41
10.03	Resident Project Representative	42
10.04	Engineer's Authority	42
10.05	Determinations for Unit Price Work	42
10.06	Decisions on Requirements of Contract Documents and Acceptability of Work	42
10.07	Limitations on Engineer's Authority and Responsibilities	42
10.08	Compliance with Safety Program	43
Article 11—Changes to the Contract		43
11.01	Amending and Supplementing the Contract	43
11.02	Change Orders	43
11.03	Work Change Directives	44
11.04	Field Orders	44
11.05	Owner-Authorized Changes in the Work	44
11.06	Unauthorized Changes in the Work	44
11.07	Change of Contract Price	45
11.08	Change of Contract Times	46
11.09	Change Proposals	46
11.10	Notification to Surety	47
Article 12—Claims		47
12.01	Claims	47
Article 13—Cost of the Work; Allowances; Unit Price Work		48
13.01	Cost of the Work	48
13.02	Allowances	52
13.03	Unit Price Work	52
Article 14—Tests and Inspections; Correction, Removal, or Acceptance of Defective Work		53
14.01	Access to Work	53
14.02	Tests, Inspections, and Approvals	53
14.03	Defective Work	54
14.04	Acceptance of Defective Work	54
14.05	Uncovering Work	55
14.06	Owner May Stop the Work	55
14.07	Owner May Correct Defective Work	55
Article 15—Payments to Contractor; Set-Offs; Completion; Correction Period		56

15.01	Progress Payments	56
15.02	Contractor's Warranty of Title	59
15.03	Substantial Completion	59
15.04	Partial Use or Occupancy	60
15.05	Final Inspection.....	60
15.06	Final Payment	61
15.07	Waiver of Claims.....	62
15.08	Correction Period.....	62
Article 16—Suspension of Work and Termination		63
16.01	Owner May Suspend Work	63
16.02	Owner May Terminate for Cause.....	63
16.03	Owner May Terminate for Convenience.....	64
16.04	Contractor May Stop Work or Terminate.....	64
Article 17—Final Resolution of Disputes		65
17.01	Methods and Procedures	65
Article 18—Miscellaneous		65
18.01	Giving Notice	65
18.02	Computation of Times	65
18.03	Cumulative Remedies	65
18.04	Limitation of Damages	65
18.05	No Waiver	66
18.06	Survival of Obligations	66
18.07	Controlling Law	66
18.08	Assignment of Contract	66
18.09	Successors and Assigns	66
18.10	Headings	66

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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 document prepared by Contractor, in a form acceptable to Engineer, to request 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; 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; 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.

- a. 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.
 - b. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - c. 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), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations 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 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. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text

messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *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.
24. *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.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *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.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *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.
30. *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.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *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.
33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *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.

35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *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.
37. *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.
38. *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 or areas furnished by Owner which are designated for the use of Contractor.
39. *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.
40. *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.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *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 of such Work.
43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, 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.
46. *Technical Data*
 - a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent

to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

- b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *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.
50. *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 Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*: 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*: The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
 - D. *Defective*: The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - 1. does not conform to the Contract Documents;
 - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - 3. 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 Paragraph 15.04).
 - E. *Furnish, Install, Perform, Provide*
 - 1. The word “furnish,” when used in connection with services, materials, or equipment, means 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, means 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, means 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. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
 - G. 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 Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6,

except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

- C. *Evidence of Owner's Insurance:* After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), 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 signed 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 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 *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 the

schedules submitted in accordance with Paragraph 2.03.A. No progress payment will 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 therefore.
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.
4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long- term compatibility, usability, or readability of the Electronic Documents 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 Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document 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 versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will 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.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will 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.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
2. 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.

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, means 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, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer 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 or Engineer 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 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 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 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 in writing 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.
- 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 notify Owner and Contractor in writing 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 versions, 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 precludes 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 30th 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 60th day after the day of Bid opening or the 30th 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 may 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 must 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 will 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 Contract Price or 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. Such an adjustment will 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 third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 4. Acts of war or terrorism.
- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price 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. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. 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, together with the provisions of Paragraphs 4.05.D and 4.05.E.

- G. Paragraph 8.03 addresses 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.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing 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, or to improvements, structures, utilities, or similar facilities located at such adjacent lands 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 7.13, 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 in a court of competent jurisdiction; 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 will 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 of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
 - 2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
 - 3. Technical Data contained in such reports and drawings.
- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.
- C. *Reliance by Contractor on Technical Data:* 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 Paragraph 1.01.A.46.b.
- D. *Limitations of Other Data and Documents:* 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;
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. 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:
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;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 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 whether it is necessary for Owner to obtain 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; 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. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, 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 subject to the provisions of Paragraphs 4.05.D and 4.05.E.
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;
 - 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 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, then any such adjustment will 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, 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.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;
 3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. 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 on the Drawings, or was not shown or indicated on the Drawings 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), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; 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
 4. 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. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, 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. 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;

- b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. 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, then any such adjustment will 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, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
- 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
 - 1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
 - 2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; 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 on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. 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;
 - 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, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, 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. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- 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, 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.I obligates 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 obligates 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 Contractor's obligations under the Contract. These bonds must 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 terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, 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 must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such

notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

- F. 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.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

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. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages 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, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.
- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages 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, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. 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, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. 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.
- H. Contractor shall require:
 - I. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - J. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- K. If either party does not purchase or maintain 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.
- L. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- M. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) 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 will be adjusted accordingly.
- N. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- O. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- P. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, 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 and Engineer.

6.03 Contractor's Insurance

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;
 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, 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;
 4. apply with respect to the performance of the Work, whether such performance is 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; and
 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);
 4. not seek contribution from insurance maintained by the additional insured; and
 5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other 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 Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's

risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

- 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 advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. 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 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer 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.
 - 1. 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, risks, 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 individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater 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.
 - 2. None of the above waivers extends 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. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, 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, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. 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 all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights 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 insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract 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 fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 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 6.04 shall maintain such proceeds in a segregated account, and 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, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional

design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to

(1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *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 maintain good discipline and order at the Site.
- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. 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 will 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.

7.04 *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 must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will 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 must 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.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, 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 equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) 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) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
 - b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item 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 will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria:* Unless the specification or description of an item of equipment or material 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 equipment or material under the circumstances described below. To the extent possible such requests must 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 equipment or material from anyone other than Contractor.
2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.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 equipment or material that Contractor seeks to furnish or use. The application:
 - a. will 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 the item specified; and
 - 3) be suited to the same use as the item 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 the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will 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 will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 Concerning Subcontractors and Suppliers

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers 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 or Supplier 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 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. 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 or Suppliers 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 or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, 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 or Supplier, whether initially or as a replacement, will 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 solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *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 an 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 will be disclosed 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.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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.

7.10 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.

7.11 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. 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 is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written 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 written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 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.

7.13 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.

- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.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).
- E. 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.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that 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.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. 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.
- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will 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.

7.14 Hazard Communication Programs

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as 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 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 by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 Submittals

A. Shop Drawing and Sample Requirements

1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) 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
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
2. Each Shop Drawing or Sample must 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 Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. Shop Drawings

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings must 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.C.

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.C.
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. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. 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, comply with the requirements of 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 will 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 or other appropriate Contract modification.
5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 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, will 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 or Sample will 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.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

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 Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
 3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.
- E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*
1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
 - 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
 - F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.
- 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 is entitled to rely on Contractor's warranty and guarantee.
 - B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 - 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 - 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
 - C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, or improper modification, 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.
 - D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
 - 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. The end of the correction period established in Paragraph 15.08;
 - 8. Any inspection, test, or approval by others; or
 - 9. Any correction of defective Work by Owner.
 - E. 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 will govern with respect to Contractor's performance obligations 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 losses, damages, costs, and judgments (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 from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage 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 will 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.

7.19 Delegation of Professional Design Services

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.
- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
 - G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

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 third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. 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.
- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, 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.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

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 for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, 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. 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 will 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, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will 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 or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
- 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.
 - 1. 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 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 8.03.B.
 - 2. 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 Contractor.
- C. 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 will 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 (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 10.07. 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 *Resident 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 the Supplementary Conditions and in Paragraph 10.07.

- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 Engineer's Authority

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.
- E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 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.

10.06 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.

10.07 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, will 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 Contractor under 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 10.07 also apply to the Resident Project Representative, if any.

10.08 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 of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 Amending and Supplementing the Contract

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (1) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in 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 11.05, (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 that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 Work Change Directives

- A. 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 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. 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.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *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. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work 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 must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates 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.

11.06 *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.C.2.

11.07 *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 must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must 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);
 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 11.07.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 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will 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 will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 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 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.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 5 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 will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will 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 of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 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 must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 Change Proposals

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

- B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
 - 2. *Supporting Data:* 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.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must 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.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
 - 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must 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.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *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 in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *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 are subject 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;
 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; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- 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 rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, 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 will 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 will 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 will 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 will 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 will 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 will 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 will be incorporated in a Change Order or other written document 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. When needed 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 will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will 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 in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, 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, will 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 accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will 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, which 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 will 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 or retained for services specifically related to the Work.
5. Other costs consisting of 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, 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.
 - 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.
 - c. *Construction Equipment Rental*
 - 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including

any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

- 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed 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 builder's risk or other property insurance established in accordance with Paragraph 6.04), 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 include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will 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 does not include any of the following items:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general 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. The cost of purchasing, renting, or furnishing small tools and hand tools.
 - 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 5. 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.
 - 6. Expenses incurred in preparing and advancing Claims.
 - 7. 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*
- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
 - 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.
- E. *Documentation and Audit:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will

establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

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 for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's 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 for Work covered by allowances, and the Contract Price will 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, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. Adjustments in Unit Price

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

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 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 with such procedures and programs 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 will 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 will 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 will 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 written 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 will 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 additional 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, 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 will 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 defective Work as required by Engineer, then Owner may, after 7 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 for 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.
 - 2. 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 must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) 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.
 - 3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 - 4. 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;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; 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 based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from 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 has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to
 - k. achieve Milestones, Substantial Completion, or final completion of the Work;
 - l. 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; or
 - m. Other items entitle 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 will 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 will be treated as an amount due as determined by Paragraph 15.01.D.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 7 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 will 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 7 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 15.03.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 6.04 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 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must 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 duly pending Change Proposals and Claims; 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 Final Application and Recommendation of Payment:* 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 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will 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. 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. Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. 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 and issuance of notice of the acceptability of the Work.
- E. Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting

balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 Waiver of Claims

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim, appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.
- 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 as a Claim, 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 Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect 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 adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, 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 from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, 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 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). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. 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.
- E. 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.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to 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 directly attributable to any such suspension. Any Change Proposal seeking such adjustments must 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) 10 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) written 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 7 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 will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 Owner May Terminate for Convenience

- A. Upon 7 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 for any loss of anticipated profits or revenue, post-termination overhead costs, 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 7 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, 7 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, pursuant to Article 12; and
 - 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise 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;
 - 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 requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
 - 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 - 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 - 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

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 will not constitute a waiver of that provision, nor will 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 of the Contract or 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 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party 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.

18.09 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.

18.10 Headings

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

SECTION 00 73 00
SUPPLEMENTARY CONDITIONS

THESE SUPPLEMENTARY CONDITIONS AMEND OR SUPPLEMENT THE STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT (C-700, 2018 EDITION) AND OTHER PROVISIONS OF THE CONTRACT DOCUMENTS AS INDICATED BELOW. ALL PROVISIONS WHICH ARE NOT SO AMENDED OR SUPPLEMENTED REMAIN IN FULL FORCE AND EFFECT.

THE TERMS USED IN THESE SUPPLEMENTARY CONDITIONS WILL HAVE THE MEANINGS INDICATED IN THE GENERAL CONDITIONS. ADDITIONAL TERMS USED IN THESE SUPPLEMENTARY CONDITIONS HAVE THE MEANINGS INDICATED BELOW, WHICH ARE APPLICABLE TO BOTH THE SINGULAR AND PLURAL THEREOF.

2.01 SC-1.01.A.20 ADD THE FOLLOWING NEW LANGUAGE AT THE END OF THE PARAGRAPH G.C. 1.01.A.22:

- A. Engineer's Consultant(s) on the Project include:

2.02 SC - 1.01.A.48 ADD THE FOLLOWING LANGUAGE AT THE END OF THE LAST SENTENCE OF PARAGRAPH 1.01.A.50:

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

2.03 SC - 1.01.A.51 ADD THE FOLLOWING NEW PARAGRAPH AFTER PARAGRAPH 1.01.A.50:

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

2.04 SC-2.01 DELETE PARAGRAPHS 2.01 B. IN ITS ENTIRETY AND INSERT THE FOLLOWING IN ITS PLACE:

- A. B. Evidence of Contractor's Insurance: Before any Work at the Site is started, Contractor shall deliver to the Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance,

certified copies of insurance policies, (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor is required to purchase and maintain in accordance with Article 6.

2.05 **SC - 2.02.A AMEND THE FIRST SENTENCE OF PARAGRAPH 2.02.A. TO READ AS FOLLOWS:**

- A. A. Owner shall furnish to Contractor three copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

2.06 **SC-3.01 ADD THE FOLLOWING NEW LANGUAGE IMMEDIATELY AFTER PARAGRAPH G.C. 3.01.G:**

- A. H. The provisions of the Instructions to Bidders and Supplementary Conditions shall take precedence over the General Conditions. In the case of conflict, ambiguity, or discrepancy between Drawings and Specifications, or otherwise within the Contract Documents, the better quality or greater quantity of Work resulting in the greater cost shall be estimated and included in the Bid and Contract Price and the matter shall be drawn to the Engineer's attention for resolution.
- B. I. The general character and scope of the Work is shown in the Drawings. Where a portion of the Work is fully drawn and the remainder is merely indicated, the portion fully drawn shall apply to all similar parts of the Work.
- C. J. Figured dimensions shall be followed in performance to scaled measurements. Dimensions on the Drawings are subject to field verification to suit adjacent elements and all elements of the Work and coordination with the Work of other contractors and subcontractors.

2.07 **SC-3.03 ADD THE FOLLOWING SUBPARAGRAPH TO PARAGRAPH 3.03.B:**

- A. 2. The precedent of the Construction Documents is in the following sequence:

Addenda and Modifications to the Drawings, Specifications take precedence over the original Construction Documents.
Should there be a conflict within the Specifications, on the Drawings or between the Specifications and the Drawings, the Engineer will decide which stipulation will provide the best installation and their decision will be final.
In the Drawings, the precedent shall be drawings of larger scale over those of smaller scale, figured dimensions over scaled dimensions and noted materials over graphic indications.

2.08 **SC-4.03 ADD THE FOLLOWING NEW PARAGRAPH IMMEDIATELY AFTER PARAGRAPH 4.03.A:**

- A. B. Reference points shall be provided by the Engineer one (1) time, subsequent reestablishment of reference points shall be the responsibility of the Contractor. Contractor shall notify the Engineer a minimum of three (3) days in advance of the need for construction reference points for the Project. All other layout and staking shall be the responsibility of the Contractor.

2.09 **SC-5.02.D ADD THE FOLLOWING NEW LANGUAGE IMMEDIATELY AFTER PARAGRAPH G.C. 5.02.D:**

- A. E. Control of Work:
1. The Contractor shall prosecute the Work so that it will cause the least practicable interference with, and avoid prolonged interruption of or damage to, existing facilities, underground utilities, overhead utilities, and roadways. The Contractor shall obtain written approval from the Owner at least twenty (20) days before performing any Work that involves either connection to existing facilities or interruption of service of existing operations. The Contractor shall perform that Work when it causes the least interference or annoyance, as determined by the Owner and Engineer.
 2. The Contractor shall initiate, maintain, and supervise all weather protection and local and area climatic and seasonal precipitation event programs applicable to the Work. In the event of severe weather, the Contractor shall immediately inspect the Work at the Site, and take all necessary actions to insure that public access and safety are maintained.
 3. The Contractor shall post construction signs to advise workers, occupants, pedestrians, and adjacent property owners of the limits of work areas, hardhat areas, excavation areas, construction parking, specific safety concerns, etc.
 4. Neither the Owner nor Engineer will accept or coordinate deliveries for the Contractor. The Contractor shall coordinate and be at the site to receive all deliveries. Materials and equipment stored on the site or right of way shall be placed so as to insure minimum danger and obstruction to the traveling public.
 5. The Contractor shall take whatever steps, procedures, or means required to prevent dust nuisance due to the Contractor's operations on-site, along haul routes, within stockpile areas, and within or along equipment or material staging areas. Dust control measures shall be maintained at all times to the satisfaction of the Owner and Engineer and as required by any other Political Subdivision with jurisdiction.
 6. The Contractor shall take whatever steps, procedures, or means required to minimize noise nuisance due to Contractor's operations on-site, along haul routes, within stockpile areas, and within or along equipment or material staging areas.
 7. Any dumping of spoil or waste material by the Contractor shall comply with all federal, state, and local laws and regulations. Whether public or

private landfills are used, the Contractor shall pay all required dumping fees and shall furnish to the Engineer evidence of such payments.

2.10 **SC-5.04 ADD THE FOLLOWING SENTENCE AS THE FINAL SENTENCE OF PARAGRAPH 5.04.A:**

- A. Satisfaction of the Contractor's duty to give written notice to the Owner and Engineer of such a differing site condition before performing work in connection therewith is a condition precedent to the Contractor's right to an equitable adjustment of price or time pursuant to paragraph 4.03.C.

2.11 **SC-5.06 DELETE PARAGRAPH 5.06.I IN ITS ENTIRETY AND REPLACE IT WITH THE FOLLOWING LANGUAGE:**

- A. I. To the fullest extent permitted by law, Owner shall not be liable to indemnify the Contractor, Subcontractors, Engineer, or any of their respective officers, directors, partners, employees, agents, consultants, or subcontractors from or against any claims, costs, losses, or damages arising out of or relating to a Hazardous Environmental Condition that: (i) was shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work; or (ii) was created by Contractor or anyone from whom Contractor is responsible.

2.12 **SC-5.06 ADD THE FOLLOWING PARAGRAPH IMMEDIATELY AFTER PARAGRAPH G.C. 5.06.K:**

- A. L. Asbestos containing materials are prohibited from use in the construction of this project. The Contractor shall certify that only non-asbestos materials were used. Typical materials likely to contain asbestos include roofing, acoustical treatments, fireproofing, drywall, plaster, resilient flooring, insulations, mastics/adhesives, gaskets, mineral products, cementitious boards/pipes/mortar, etc.

2.13 **SC-6.02 INSURANCE-GENERAL PROVISIONS**

- A. Paragraph 6.02.B of the General Conditions requires that all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better, unless a different standard is indicated in the Supplementary Conditions. The A.M. Best ratings are based on the financial strength and size of the insurance company, with A-VII representing a commonly used standard. SC-6.02 is the location for noting any different standard, whether narrower or broader.

2.14 **SC-6.03 ADD THE FOLLOWING NEW PARAGRAPH IMMEDIATELY AFTER PARAGRAPH G.C. 6.03.C:**

- A. D. The limits of liability for insurance required by paragraph 6.03 of the General Conditions shall provide the following coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:
 - a. State: Statutory
 - b. Applicable Federal (e.g. Longshoreman's): Statutory
2. Jones Act coverage, if applicable:
 - a. Bodily injury by accident, each accident \$2,000,000
 - b. Bodily injury by disease, aggregate \$2,000,000
3. Employer's Liability:
 - a. Bodily injury, each accident \$2,000,000
 - b. Bodily injury by disease, each employee \$2,000,000
 - c. Bodily injury/disease aggregate \$2,000,000
4. Foreign voluntary worker compensation Statutory
5. Contractor's General Liability:
 - a. General Aggregate \$2,000,000
 - b. Products - Completed Operations Aggregate: \$2,000,000
 - c. Personal and Advertising Injury: \$2,000,000
 - d. Each Occurrence (Bodily Injury and Property Damage): \$2,000,000
6. Automobile Liability:
 - a. Bodily Injury:
 - 1) Each Person: \$2,000,000
 - 2) Each Accident: \$2,000,000
 - b. Property Damage - Each Accident \$2,000,000
 - c. Combined Single Limit of \$2,000,000
7. Excess or Umbrella Liability
 - a. General Aggregate \$5,000,000
 - b. Each Occurrence \$5,000,000
8. Contractor's Pollution Liability:
 - a. Each Occurrence \$2,000,000
 - b. General Aggregate \$2,000,000
9. Contractor's Professional Liability
 - a. Each Claim \$2,000,000
 - b. Annual Aggregate \$2,000,000
10. Mobil Equipment \$2,000,000
11. Additional Insureds:
 - a. Kearns Improvement District
 - b. Advanced Engineering and Environmental Services, LLC

2.15 SC-6.05 DELETE PARAGRAPH 6.05.A IN ITS ENTIRETY AND INSERT THE FOLLOWING IN ITS PLACE:

- A. A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof.
1. This insurance shall:
 - a. Include the interests of Owner, Contractor, Subcontractors, Engineer, and any other individuals or entities identified herein, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
 - b. Be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, false work, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, 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;
 - c. Include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 - d. Cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 - e. Allow for partial utilization of the Work by Owner;
 - f. Include testing and startup; and
 - g. Be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor and Engineer with thirty (30) days written notice to each other additional insured to whom a certificate of insurance has been issued.
 2. Contractor shall be responsible for any deductible or self-insured retention.
 3. The policies or insurance required to be purchased and maintained by Contractor in accordance with this Paragraph SC-6.05.A shall comply with the requirements of paragraph 6.05.C of the General Conditions."

2.16 SC-7.03 AMEND THE FIRST SENTENCE OF PARAGRAPH 7.03.C. TO STATE THE FOLLOWING:

- A. all Work at the Site shall be performed during regular working hours, Monday through Friday, 7:00 AM through 8:00 PM.

2.17 SC-7.05 DELETE PARAGRAPH G.C. 7.05 IN ITS ENTIRETY AND INSERT THE FOLLOWING IN ITS PLACE:

- A. A. "Approved equivalent", "or-equal", and "prior approved equivalent" items of materials or equipment will be considered only during the bidding period as outlined in the Instructions to Bidders and Section 00 26 00 – Procurement Substitution Procedures of the Specifications.

2.18 SC-7.06 DELETE PARAGRAPH G.C. 7.06 IN ITS ENTIRETY AND INSERT THE FOLLOWING IN ITS PLACE:

- A. A. Substitute items of materials or equipment will be considered only during the bidding period as outlined in the Instructions to Bidders and Section 00 26 00 – Procurement Substitution Procedures of the Specifications.

2.19 SC-7.07 ADD THE FOLLOWING NEW LANGUAGE IMMEDIATELY AFTER PARAGRAPH G.C. 7.07.D:

- A. 1. The apparent successful Bidder shall, within 24 hours after Bid opening, submit to Owner a list of all such Subcontractors and Suppliers proposed for the Work of this Project. An experience statement shall accompany such lists with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor and Supplier requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice to Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in the cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the contract award.

2.20 SC-7.07 DELETE PARAGRAPH 7.07.L IN ITS ENTIRETY AND INSERT THE FOLLOWING IN ITS PLACE:

- A. L. Owner or Engineer may furnish to any such Subcontractor, Supplier, or other person or organization, to the extent practicable, information about amounts paid to Contractor in accordance with Contractor's Application for Payment on account of the particular Subcontractor's, Supplier's, other person's, or other organization's Work.

2.21 SC-7.09 ADD THE FOLLOWING PARAGRAPH IMMEDIATELY AFTER 7.09.A:

- A. B. Contractor shall obtain such permits, certificates and licenses that are required for completion of the Work. Permits, certificates and licenses include, but are not limited to;
 - 1. National Pollutant Discharge Elimination System (NPDES) Storm Water Permit.
 - 2. Permit and/or coordination with the State Electrical Inspector, as required.

3. Building Permit. Contractor will apply for the Building Permit, and paid for by the Kearns Improvement District. Building Permit fee not to be included in bid amount.
 4. General, Mechanical and Plumbing Contractor. License fee is not refundable by the City.
- B. C. Contractor shall obtain permits required for disposal of construction debris removed from Project Sites(s) or generated during the execution of the Work.

2.22 **SC-8.04 ADD THE FOLLOWING NEW LANGUAGE IMMEDIATELY AFTER PARAGRAPH GC 8.03:**

A. *8.04 Claims Between Contractors*

- B. A. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner, Engineer, Engineer's Consultants, Construction Coordinator and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from all claims, costs, losses and damages (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any separate contractor against Owner, Engineer, Engineer's Consultants, or the Construction Coordinator to the extent said claim is based on or arises out of Contractor's performance of the Work. Should a separate contractor cause damage to the Work or property of Contractor or should the performance of the Work by any separate contractor at the Site give rise to any other Claim, Contractor shall not institute any action, legal or equitable, against Owner, Engineer, Engineer's Consultants, or the Construction Coordinator or permit any action against any of them to be maintained and continued in its name or fit its benefit in any court or before any arbiter which seeks to impose liability or to recover damages from Owner, Engineer, Engineer's Consultants, or the Construction Coordinator on account of any such damage or Claim.
- C. C. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a Claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner, Engineer, Engineer's Consultants, and Construction Coordinator for any delay, disruption, interference or hindrance caused by any separate contractor. This paragraph does not prevent recovery from Owner, Engineer, Engineer's Consultant, or Construction Coordinator for activities that are their respective responsibilities.

2.23 **SC-10.03 ADD THE FOLLOWING NEW PARAGRAPHS IMMEDIATELY AFTER PARAGRAPH 10.03.B:**

- A. C. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
 4. Liaison:
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
 5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
 6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
 7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
 8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

- b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
- 9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
- 10. Records:
 - a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
 - b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
 - c. Maintain records for use in preparing Project documentation.
- 11. Reports:
 - a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
 - b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
 - c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
- 12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.
 14. Completion:
 - a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
 - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- B. D. The RPR shall not:
1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
 8. Authorize Owner to occupy the Project in whole or in part.

2.24 SC-11.05 ADD THE FOLLOWING PARAGRAPH IMMEDIATELY AFTER 11.05.C:

- A. D. Except as specifically authorized in writing by the Engineer at the time additional work is done beyond the original scope of the Contract Documents, the Contractor shall make no claims for additional compensation. The Contractor's plea of ignorance of foreseeable conditions which will create difficulties or hindrances in the execution of the work will not be acceptable to the Owner as an excuse for any failure of the Contractor to fulfill the requirements of the Contract

Documents, and shall not be a basis for the Contractor's claim for additional compensation. Any discrepancies in, or conflicts between, the items described in these Contract Documents must be submitted in writing to the Engineer for adjustment prior to proceeding with the work, as any claims for additional compensation to achieve compliance with the requirements of those items will not be allowed or considered.

2.25 SC-12.01.B AMEND THE FIRST SENTENCE OF PARAGRAPH 12.01.B TO READ AS FOLLOWS:

- A. Replace the words "~~in no event later than 30 days~~" with "in no event later than 10 days". So amended, Paragraph 12.01.B remains in full effect.

2.26 SC-15.01.B.1 AMEND THE FIRST SENTENCE OF PARAGRAPH 15.01.B.1 TO READ AS FOLLOWS:

- A. Replace the words "~~At least 20 days~~" with "At least 10 days". So amended, Paragraph 15.01.B.1 remains in full effect.

2.27 SC-15.01.C.5 AMEND PARAGRAPH 15.01.C.5 TO READ AS FOLLOWS:

- A. Engineer may refuse to recommend the whole payment or any part of the payment if, the established Contract time for Substantial Completion has expired or, if in the opinion of the Engineer, that the representation in paragraph 15.01.C.2 would be incorrect.

2.28 SC-15.01.C.6 ADD THE FOLLOWING NEW LANGUAGE AT THE END OF THE PARAGRAPH G.C. 15.01.C.6.E:

- A. e. Failure to make payment to Subcontractors, Supplier, or labor.
- B. f. Claims made by Engineer for additional compensation because of Contractor delays or rejection of defective Work.
- C. g. Liability for liquidated damages has been incurred by Contractor.

2.29 SC-15.01.D.1 AMEND THE FIRST SENTENCE OF PARAGRAPH G.C. 15.01.D.1 TO READ AS FOLLOWS:

- A. Replace the words "Ten days" with "Thirty days". And so amended paragraph 15.01.D.1 remains in effect.

2.30 SC-15.03.B ADD THE FOLLOWING LANGUAGE AT THE END OF THE SECOND SENTENCE OF PARAGRAPH 15.03.B:

- A. If the work is found to not be substantially complete, all costs associated with any subsequent inspections, will be documented by the Engineer, and Owner will compensate Engineer for subsequent inspections. Owner will deduct amount of compensation paid to the Engineer from the payment to the Contractor. Compensation shall be at the Engineer's standard hourly rates plus actual cost of reimbursable.

2.31 **SC-15.04 ADD THE FOLLOWING SUBPARAGRAPH TO 15.04.A:**

- A. 5. Occupancy and use by the Owner shall not constitute, in itself, acceptance of the work.

2.32 **SC-15.04 ADD THE FOLLOWING NEW PARAGRAPH IMMEDIATELY AFTER PARAGRAPH G.C. 15.04.A, WHICH IS TO READ AS FOLLOWS:**

- A. B. Owner may at any time request in writing Contractor to permit Owner to take over operation of any part of the Work although it may not be substantially complete. A copy of such request will be sent to Engineer, and within a reasonable time thereafter Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected prior to final payment. If Contractor does not object in writing to Owner and Engineer that such part of Work is not ready for separate operation by Owner, Engineer will finalize the list of items to be completed or corrected and will deliver such list to Owner and Contractor together with a written recommendation as to the division of responsibility pending final payment between Owner and Contractor with respect to security, operation, safety, maintenance, utilities, insurance, warranties, and guarantees for that part of the Work which will become binding upon Owner and Contractor at the time the Owner takes over such operation (unless they shall have otherwise agreed in writing and so informed Engineer). During such operation and prior to Substantial Completion of such part of Work, Owner shall allow Contractor reasonable access to complete or correct items on said list and to complete other related Work.

2.33 **SC-15.05.A ADD THE FOLLOWING LANGUAGE AT THE END OF THE SECOND SENTENCE OF PARAGRAPH 15.05.A:**

- A. If, after such measures are taken, subsequent inspections by Engineer reveal that any of the previously identified items remain incomplete or defective, Engineer will again notify Contractor in writing of the remaining items. All costs associated with any subsequent inspections, will be documented by the Engineer, and Owner will compensate Engineer. Owner will deduct amount of compensation paid to the Engineer from the payment to the Contractor. Compensation shall be at the Engineer's standard hourly rates plus actual cost of reimbursable.

2.34 **SC-15.06.A.2 ADD THE FOLLOWING PARAGRAPH IMMEDIATELY AFTER 15.06.A.2.E:**

- A. e. Certificate of Occupancy issued by the City of Salt Lake City.

2.35 **SC-16.03 DELETE PARAGRAPH 16.03.A.3. IN ITS ENTIRETY.**

2.36 **SC-17.01C ADD THE FOLLOWING NEW PARAGRAPHS TO PARAGRAPH 17.01:**

A. C. Any claim, dispute or other matter in question arising out of or related to this Agreement shall be subject to mediation. Mediation is not a condition precedent to commencing litigation, but if litigation is commenced, the parties agree to mediate before any dispositive motions or trial. Litigation may be commenced in state or federal court having jurisdiction in the place where the Work is located, within the time periods prescribed by applicable law.

2.37 **SC-17.02 ADD THE FOLLOWING NEW PARAGRAPH IMMEDIATELY AFTER PARAGRAPH 17.01.**

A. SC-17.02 Attorneys' Fees: For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

END OF SECTION 00 73 00

SECTION 01 11 00
SUMMARY OF WORK

PART 1 GENERAL

1.01 OVERVIEW

A. This section includes:

1. Project Description.
2. Project Work Covered by Contract Documents.
3. Contract Information.
4. Administrative and Procedural Sections.
5. Description of Work for All Construction.
6. Work by Owner.
7. Instrumentation and Control Responsibilities of Contractor and Work by Others.
8. Critical Work Sequences.
9. Access to Streets and Highways.
10. Reference Standards.
11. Fines.
12. Coordination of Existing Conditions and Contract Documents.
13. Salvaged Demolition Debris.
14. Restocking.

1.02 PROJECT DESCRIPTION

Contract No. 1 - KID 5400 South Water Line Phase 2 Replacement

1. The Project generally consists of the following: Installation of 1,670 feet of 20-inch ductile iron pipe and appurtenances (in Zone B) along 5400 South from (Approximately 6100 West) to the District's property located at 6380 West 5400 South with pressure reducing and metering facilities as shown in the Project Drawings (Phase 2).

PROJECT WORK COVERED BY CONTRACT DOCUMENTS

A. Work associated with the Project will be comprised of the following Contracts:

1. **Contract No. 1 – KID 5400 South Water Line Phase 2 Replacement**

1.03 CONTRACT INFORMATION

- A. The Owner will award a single Prime Contract for which the Work will be completed under a unit price contract for Contract No.1.
- B. The Contractor shall not commence work until proper execution of the contract and written authorization to proceed has been issued by the Owner. Proper execution of the contract shall include all surety bonds and insurance requirements.
- C. The division of work as made by the specifications and contract drawings is for the purpose of specifying work which is required. There is no attempt to make classification according to trades or any agreements, which may exist between contractors or subcontractors and trade unions. Classification of the work shall be the Contractor's responsibility.
- D. The location of work under these contract documents is located on property of the Owner or easements obtained by the Owner, as shown on the contract drawings.
- E. Completion Dates:
 - Include specific timelines for certain aspects of the project. Some examples below:
 - 1. Substantial Completion: July 30, 2026.
 - 2. Final Payment Date: August 27, 2026.
 - 3. Winter construction may be required. Contractor shall include in their Bid all necessary requirements for sequencing and winter construction to meet the completion dates.
- F. Liquidation Damages for this project are as indicated in the Standard Contract between Owner and Contractor.
- G. Work of the Contract is identified in the following Articles.

1.04 ADMINISTRATIVE AND PROCEDURAL SECTIONS

- A. Division 00 – Procurement and Contracting Requirements: All Sections.
- B. Division 01 – General Requirements: All Sections.

1.05 DESCRIPTION OF WORK FOR ALL CONSTRUCTION

- A. General: The following is provided to assist the Bidder in locating the major components and Work associated with the various bid items. It is not intended to provide a list of every drawing or specification that describes work associated with each bid item.
 - 1. Base Bid:
 - a. Specifications: All Divisions and Sections.
 - b. Drawings: All Drawings.

1.06 WORK BY OWNER

- A. Contractor shall coordinate the timing and operational requirements of the Work with the Owner and Engineer.
- B. Owner will provide control system programming for the Project. Contractor shall coordinate control system Work with Engineer and allow ample time for completion of required control system, check-out, programming, and start-up and training services to meet Contractor's Substantial and Final Completion dates.
- C. Decommissioning of process units, tanks, equipment or systems as required by the Contractor for the purposes of completing the Work. Decommissioning is limited to taking the unit, tank, item of equipment or system out of service. The Contractor is responsible for disconnecting piping, power, utilities, and controls; for demolition; for temporary valves, barriers, piping, barricades, and other temporary facilities; and all other Work.
- D. Isolation, initial liquid draining or removal of chemicals or solids, and hose cleaning of tanks and basins, unless otherwise specified. Contractor will provide sites for disposal of process liquids or slurries generated by isolation and flushing activities. After initial isolation, initial draining, removal of chemicals and solids, and hose cleaning, Contractor shall be responsible for additional washing or cleaning needed to complete the Work.
- E. For all piping systems, unless otherwise specified herein, the Owner will drain the lines.
- F. Initial filling of process units, tanks, or systems for the purpose of testing except as otherwise specified.
- G. Filling of process units, tanks or systems for the purpose of placing them into service.
- H. Operation of existing facilities not taken out of service or otherwise made available to the Contractor for purposes of executing the Work.

1.07 CRITICAL WORK SEQUENCES

- A. Coordinate construction schedule and operations with Owner and Engineer to accommodate Owner occupancy requirements.
- B. The Contractor must work with Owner and Engineer to ensure the uninterrupted supply of drinking water throughout the duration of the Project.
- C. Sequencing of the Work shall be the responsibility of the Contractor with input from all subcontractors.
- D. Contractor shall provide Owner and Engineer full access to existing facilities for the duration of the project.

1.08 ACCESS TO STREETS AND HIGHWAYS

- A. Maintain suitable means of access for property owners abutting streets and highways involved in construction, except as specifically permitted otherwise by Owner.
- B. If applicable in the course of the Work, the Contractor shall be responsible for all construction signing, flagging, and protection of the public. Signing shall conform to requirements as set forth in the Manual on Uniform Traffic Control devices.
- C. Whenever construction is stopped due to inclement weather, weekends, holidays, or other reasons, suitable access shall be provided for all property owners.
- D. Maintain access for firefighting equipment and access to fire hydrants.

1.10 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements of the standard, except when requirements that are more rigid are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the bid date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is specified.
- C. Obtain copies of standards when required by contract documents. Maintain copy at job site during progress of the specific Work.

1.11 FINES

- A. In the event the Owner is fined by the Utah Department of Environmental Quality, United States Environmental Protection Agency, Utah Department of Health, or other authorities having jurisdiction, as a result of the Contractor's actions or lack of actions, the Owner will deduct from payment, due the Contractor, corresponding amounts to cover the cost of such fines, including the costs of related engineering and legal fees.

1.12 COORDINATION OF EXISTING CONDITIONS AND CONTRACT DOCUMENTS

- A. Do not interrupt existing utilities except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.
- B. Take and verify dimensions of existing structures, piping, and equipment required for the proper fabrication and installation of new piping and equipment.
- C. The Drawings indicate required pipe sizes and the general arrangement for major piping and equipment. Layout and arrangement for certain other piping systems shall be in conformance to the equipment items furnished. Locations shall be verified in the field by the Contractor. Valves and fittings furnished shall be of such dimensions to allow for the installation of this piping as shown on the

Drawings. In the event it should become necessary to change the location of the work due to interference with other work, the Contractor shall request written permission from the Engineer before making changes, and such changes shall be made without added cost to Owner. Under no circumstances shall the pipe sizes indicated on the Drawings be changed without first having the written approval of the Engineer.

- D. The final length and location of required pipe connections to equipment shall be coordinated to meet the requirements and recommendations of the equipment manufacturer and shall be subject to the approval of the Engineer.
- E. Install no work that directly connects to equipment until such time as complete shop drawings of said equipment have been reviewed and approved by the Engineer and Owner.
- F. Discrepancies discovered before or after work has started shall be brought to the attention of the Engineer immediately, and the Engineer reserves the right to require minor changes in the work of Contractor to eliminate such discrepancies.

1.13 SALVAGED DEMOLITION DEBRIS

- A. Owner shall have the right to retain select demolition debris. At the discretion of Owner, select demolition debris items shall be stored on-site and remain the property of the Owner. Owner shall designate the location for storage of salvageable demolition debris items. Contractor shall place selected items in designated storage area.

1.14 RESTOCKING

- A. There will be no additional compensation made to Contractor due to restocking charges for materials not used on the project.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 11 00

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SECTION 01 14 00
WORK RESTRICTIONS

PART 1 **GENERAL**

1.01 SUMMARY

- A. This Section includes:
 - 1. Special Provisions.
 - 2. Contractor Use of Site and Premises.
 - 3. Owner Occupancy Requirements.
 - 4. Road Restrictions.

1.02 SPECIAL PROVISIONS

- A. In addition to the liquidated damages as stated in Article 18 of the Supplemental General Conditions of the Contract, Contractor will also be responsible for payment of any legitimate claims made by other parties (i.e., other Contractors, residents, etc.) within the area who have incurred a loss as a result of Contractor's construction practices or failure to complete the Work of this project by the specified completion date(s).
- B. Contractor will not be entitled to any compensation for causes resulting in delays or hindrances to the Work. Extensions of time will be granted for unavoidable delays, which in the opinion of the Engineer are clearly beyond the control of the Contractor. Unavoidable delays include, but are not limited to, acts of God or the public enemy, acts of the Owner, fires, floods, epidemics, quarantine restrictions, strikes, and freight embargos. The Engineer must receive written request for time extension from the Contractor not more than 10 days after commencement of delay before any time extension will be considered. Requests made beyond the 10-day limit will be cause for denial. Any extension of time will not relieve the Contractor or Contractor's sureties from their obligations, which shall remain in full force and effect until the satisfactory discharge of the Contract.
- C. It shall be the Contractor's responsibility to follow OSHA standards for all Work.
- D. All incidental damages to streets, driveways, berms, etc. due to Contractor's construction techniques shall be repaired at the Contractor's expense prior to making final payment.
- E. Contractor shall comply with ordinances of the City of Kearns concerning truck traffic within the City and designated haul routes. It is the Contractor's responsibility to obtain a copy of and comply with all of the ordinances. Copies of City ordinances may be obtained at the Kearns City Hall.
- F. Contractor shall obtain such permits and licenses that are required for completion of the Work. Refer to the Supplementary General Conditions for additional permit requirements. Permits include, but are not limited to;

1. National Pollutant Discharge Elimination System (NPDES) Storm Water Permit.
2. Permit and/or coordination with the State Electrical Inspector, as required.
3. Other Permits as required for completion of the Work.

1.03 CONTRACTOR USE OF SITE AND PREMISES

- A. Limit use of Site and premises to allow:
 1. Owner occupancy.
 2. Work by Others.
- B. Coordinate performance of all Work with Owner operations.
- C. Coordinate use of premises under direction of Engineer. Contractor shall confine construction equipment, storage of materials and equipment and operations of workmen to areas permitted by law, ordinances, permits, or requirements of Contract Documents, and shall not unreasonably encumber premises with construction equipment or other materials or equipment.
- D. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.
- E. Move any stored products, under Contractor's control, which interfere with operations of the Owner.
- F. Construction personnel may park only in areas designated by the Owner.
- G. Obtain and pay for use of storage or work areas needed for operations.
- H. Contractor, in coordination with Owner, shall notify and coordinate with Police Department, Fire Department, and Hospital/Ambulance Services. Notice shall include work schedule as construction proceeds, when work affects or obstructs intersections and streets, and when work is completed or suitable access is available in streets and intersections.
- I. Contractor shall provide the name, address, and telephone number of person who has access to equipment and is authorized to make emergency repairs to Contractor's work, such as to correct trench cave-ins, move excavated material, and correct other problems during weekends and off-work hours, so access can be maintained for firefighting equipment, and to maintain barricades for public safety.
- J. The Contractor must be satisfied through personal examination of the Site(s) as to all local conditions affecting their performance of the Contract. The Contractor is deemed to accept such conditions as found to exist.
- K. The Contractor shall preserve all monuments, benchmarks, reference points, and stakes. In case of destruction thereof, the Contractor will be charged with expense of replacement and shall be responsible for any mistake or loss of time that may be caused. Permanent monuments or benchmarks which must be

removed or disturbed shall be protected until properly referenced for relocation. The Contractor shall furnish materials and assistance for the proper replacement of such monuments or benchmarks.

L. Damaged Property:

1. Patch and or clean existing improvements and restore damage of property on, or adjacent to the Site(s) occasioned by the Work, including but not limited to, lawns, walks, driveways, roadways, curbs, pavements, structures, and utilities which are cut or damaged by operations and are not designated for removal, relocation, or replacement in the course of construction.
2. If any direct or indirect damage is done to public or private property resulting from any act, omission, neglect, or misconduct, the Contractor shall restore the damaged property to a condition equal to that existing before the damage at no additional cost to the Owner. Repair, rebuild, or restore property as directed or make good such damage in an acceptable manner.
3. Provide written acceptance of restoration by authority or Owner.

M. Existing Facilities:

1. The Contractor shall take all necessary field measurements affecting all existing construction, wiring, piping, and equipment in this Contract and shall be solely responsible for proper fit between all Work under the Contract and existing structures, piping, and equipment.
2. Dimensions given on the drawings related to existing structures are based upon existing construction record drawings and it shall be the responsibility of the Contractor to verify the accuracy of all dimensions shown for existing structures, piping, and equipment. Any discrepancies shall be brought to the attention of the Engineer prior to the start of new construction or ordering of any materials. Contractor shall be responsible for any materials ordered that will not fit due to the failure to verify any discrepancies of existing structures, piping, and equipment prior to the start of new construction.

N. Existing Utilities:

1. Existing underground utilities, as shown on the drawings, are located in accordance with available data but locations shall be determined by the Contractor prior to beginning construction. A utility locate is required prior to any excavation.
2. Existing utilities not shown on the drawings and requiring relocation shall be exposed by the Contractor without damage. If damaged, the Contractor shall bear the responsibility and cost of repair or replacement.

O. Environmental Resources:

1. Protect environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this Contract. Confine activities to areas defined by the contract documents.

2. Prior to construction, identify all land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without permission from the Owner. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.
3. Protect trees, shrubs, vines, grasses, land forms, and other landscape features shown on the drawings to be preserved by marking, fencing, or using other approved techniques.
4. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's activities. Maintain temporary erosion and sediment control measures such as fencing, berms, dikes, drains, sedimentation basins, grassing, and mulching, until permanent drainage and erosion control facilities are completed and operative.
5. See Section 01 50 00 for additional requirements.

1.04 OWNER OCCUPANCY REQUIREMENTS

- A. Cooperate with Owner to minimize conflict and to facilitate Owner's operations. Schedule all Work to accommodate this requirement. No interruption will be permitted which adversely affects the degree of service the Owner provides. Contractor shall provide temporary facilities and make temporary modifications as necessary to keep the facilities in operation during the construction period.
- B. Facility down time (if required for construction) during normal operating hours shall be pre-scheduled with Owner. Contractor must submit shutdown request in writing to Owner a minimum of 72 working hours in advance. Contractor shall allow 48 working hours between approval and shutdown for operator preparation. Owner may deny schedule if:
 1. Contractor fails to follow request procedures.
 2. Anticipated daily production requirements cannot be met during normal operating hours.
 3. Other considerations cannot be met.
- C. Work requiring planned facility shutdown, once undertaken, must be substantially completed to permit restart of facility within scheduled time. Critical Work elements may require continuous, non-stop work during or throughout the night to complete within schedule.
- D. Pre-plan, schedule, coordinate, and stage for required materials, manpower, Contractors, subcontractors, etc. to complete critical elements of Work.
- E. Existing materials and equipment removed and not reused as part of the Work, and not identified elsewhere in the contract documents for salvage, shall be properly disposed of by the Contractor at no additional cost to Owner.

- F. Owner must approve all proposed water well, water main, and water tower shutdowns. Contractor to schedule 48 hours in advance of anticipated shutdown. Owner may deny schedule if anticipated daily production requirements or other considerations cannot be met during normal operating hours.

1.05 ROAD RESTRICTIONS

- A. Contractor shall take road restrictions into consideration. Road restrictions shall not be used as an excuse for missing deadlines and Contractor shall take road restrictions into consideration in preparing their bid price.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 14 00

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SECTION 01 29 27 - MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Measurement and payment criteria applicable to the Work.
 - 2. Defect assessment and non payment for rejected Work.
- B. Related Sections
 - 1. Bidding Documents - Bid.
 - 2. Contract Documents - Agreement.
 - 3. General Conditions of the Contract.
 - 4. Supplementary General Conditions.
 - 5. Section 01 11 00 – Summary of Work.
 - 6. Section 01 29 00 – Progress Payment Procedures.

1.02 AUTHORITY

- A. The Engineer and Owner will make final determinations regarding the completeness of Work and subsequent payment of such Work.
- B. The Engineer and Owner will take all measurements and compute quantities accordingly.
- C. Contractor shall assist by providing necessary measurements, supporting data, and field data as required.

1.03 BID ITEMS

- A. Quantities indicated in the Bid Form are for Bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer shall determine payment.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit prices contracted.
- C. No other items of Work required by the Drawings or Specifications shall be measured or paid for separately but shall be included as part of the listed item to which the Work pertains. Failure to list all such related Work in the following descriptions of items shall not invalidate this stipulation nor relieve the Contractor from his obligation for such Work.

1.04 PAYMENT

- A. Payment includes: Full compensation for all required mobilization, bonding, insurance, labor, skill, products, tools, equipment, rentals, transportation, services, incidentals, erection, application and installation of the Work; submittal of Shop Drawings, product data and operation and maintenance data or

manuals, record data, start-up and system demonstration, where required, warranties, overhead and profit.

- B. Final Payment for Work will be made on the basis of the Work accepted by the Engineer and Owner.

1.05 EXCAVATION AND TRENCHING

- A. Except where otherwise specified, the unit or lump sum price for each item of Work which involves excavation or trenching shall include all costs for such Work. No separate payment shall be made for excavation or trenching.

1.06 DEFECT ASSESSMENT

- A. Replace the Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies:
 - 1. The defective Work may remain, but the price will be adjusted to a new price at the discretion of the Engineer and Owner.
 - 2. The defective Work will be partially repaired to the satisfaction of the Engineer and Owner, and the price will be adjusted at the discretion of the Engineer and Owner.
- C. The authority of the Engineer and Owner to assess the defect and determine payment adjustment is final.

1.07 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected Products.

1.08 SCHEDULE OF PRICES

- A. Bid Schedule descriptions as follows:

Bonding (Bid items A.1)

- a. This item shall consist of all bonding and insurance for all Work included within the Construction Contract. The bonding and insurance shall be limited to five percent (5%) of the total Contract Bid Price.

Mobilization (Bid items A.2)

- a. This item shall consist of all Work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to and from the Project Site;

for the establishment and subsequent removal of all offices and storage facilities, Contractor's buildings, and other facilities necessary for Work on the project; and for all licenses, fees, and permits; and for all other Work and operations which must be performed, or costs incurred, prior to beginning and after completion of Work on the various items on the Project Site.

- b. When partial payments are made on the contract, payment for mobilization will be made according to the following schedule:
 - 1) When 10 percent of the original contract amount is earned, 50 percent of the amount bid for mobilization, or 5 percent of the original contract amount, whichever is less, will be paid.
 - 2) When 80 percent of the original contract amount is earned, 100 percent of the amount bid for mobilization, or 10 percent of the original contract amount, whichever is less, will be paid.
- c. Upon completion of all Work on the Project, payment of any amount bid for mobilization in excess of 10 percent of the total contract amount will be paid.

Traffic Control (Bid items A.3)

- a. Includes all labor, materials, equipment, and supplies to manage traffic along construction corridor up to UDOT specifications and as shown on Sheet G003 of the Project Drawings.

Permitting (Bid items A.4)

- a. Includes obtaining and abiding to SWPPP permitting for project. Includes obtaining and abiding to UDOT Right-Of-Way permits and state requirements.

Construction Surveying (Bid items A.5)

- a. Includes all labor, materials, equipment, and supplies to locate existing utilities.

Temporary controls (Bid items A.6)

- a. Includes all labor, materials, equipment, and supplies associated with the installation, maintenance, and removal from site of sanitary facilities, storage, milled-in plates to comply with UDOT restrictions of open trenching, trench boxes, fire protection, and applicable appurtenances (see Sheet G003 of Project Drawings).

Quality Control (Bid items A.7)

- a. Includes all labor, materials, equipment, supplies associated with materials testing, hydrostatic pressure testing, flushing, and disinfection of public water lines.
- b. Contractor is responsible for including the payment of all field testing under this bid item.

20-inch DI Pipe (Bid items A.8)

- a. Includes all labor, materials, equipment, and supplies associated with installing 20-inch Class 52 or Pressure Class 350 ductile iron pipe with push on joints, including mechanical joints/restraints, bends, thrust blocking, trenching, pipe bedding, and backfill material as required in the Project Drawings.

- b. This does not include the cost of saw cutting and removal of existing asphalt nor asphalt restoration.

20-inch Butterfly Valves (Bid items A.9)

- a. Includes all labor, materials, equipment, and supplies associated with installing 20-inch AWWA butterfly valves and corresponding sampling ports as shown in the Project Drawings.

North Tank Connection (Bid item A.10)

- a. Includes all labor, materials, equipment, and supplies associated with connection from existing 1 MG tank pipe (STA 0+39) to pipe bend (STA 0+52) and proper removal and disposal of AC pipe as described and shown in Project Drawings.
- b. Also includes all labor, materials, equipment, and supplies associated with installation of 12-inch cap on existing water main (STA 0+42.55).

Tanks Isolation Assembly (Bid item A.11)

- a. Includes all labor, materials, equipment, and supplies associated with connection from the tee (STA 1+27.14) to 12-inch couplers to the north and south and to 20-inch coupler to the east (STA 1+33.14) as shown in Project Drawings.
- b. Does not include 20-inch Butterfly Valve-See A.9

Meter Assembly & PS Connection (Bid item A.12)

- a. Includes all labor, materials, equipment, and supplies associated with connection from the tee (STA 1+57.44) to the coupler on the 8-inch WL to the Northrup Grumman pump station as shown in Project Drawings. Vault is pre-cast and can be cored to install pipe
- b. Also includes labor, materials, equipment, and supplies associated with valve removal and cap on existing water main (STA 0+52.47).

PRV Assembly & Zone C Connection (Bid item A.13)

- a. Includes all labor, materials, equipment, and supplies associated with the 12-inch PRV / ARV assembly (STA 0+45.24) and the connection from the tee (STA 2+05.51) to the 16-inch by 12-inch Zone C WL tapping sleeve to the north (STA 1+61.53) and to the coupler for the 6-inch WL heading south (STA 0+59.10) as shown in Project Drawings. This also includes the 6-inch hydrant line and connection just south of the Zone C WL connection (STA 1+55.73). Vault is pre-cast and can be cored to align 12-inch water line.

6-inch PVC Drainage Pipe (Bid item A.14)

- a. Includes all labor, materials, equipment, and supplies associated with drainage pipe from the 12-inch PRV vault (STA 0+45.24). This draining line slopes to the on-site retention pond as shown on Sheet C103 of the Phase II Drawings.
- b. Also includes all labor, materials, equipment, and supplies associated with approximately 95 linear feet of drainage pipe from the existing cleanout to new cleanout and tie-in point along the existing pump station drain line as shown on Sheet C103 of the Phase II Drawings.

Retaining Wall (Bid item A.15)

- a. Includes all labor, materials, equipment, and supplies associated with installation of the rock retaining wall shown on Sheet C103 of the Phase 2 Project Drawings. The rock material will be provided by the District.

Abandon Pipe (Bid items A.16)

- a. Includes all labor, materials, equipment, and supplies associated with capping and leaving pipe, valves, and fittings in place wherever possible without the use of grout or flow fill. Locations where removal may be necessary are shown in the Project Drawings.

Asphalt Restoration (Bid item A.17)

- a. Includes all labor, materials, equipment, and supplies associated with the restoration of asphalt as shown in the Project Drawings.
- b. Also includes saw cutting, removal, and haul off of all existing asphalt associated with installation of new facilities.
- c. Asphalt quantity paid by the ton of new material, not by the ton of existing material being removed or by the combination of the two.

Concrete Restoration (Bid item A.18)

- a. Includes all labor, materials, equipment, and supplies associated with the restoration of concrete curb and gutter, median, and sidewalk as shown in the Project Drawings.
- b. Also includes saw cutting, removal, and haul off of all existing asphalt associated with installation of new facilities.

Striping Restoration (Bid item A.19)

- a. Includes all labor, materials, equipment, and supplies associated with the restoration of white and yellow lane striping and left turn arrows as shown in the Project Drawings.

Site Restoration (Bid item A.20)

- a. Includes all labor, materials, equipment, and supplies associated with the site restoration of landscape material as shown in the Project Drawings.

1.09 CHANGES IN PLAN QUANTITY

- A. Plan quantities are based on assumed existing conditions and/or as stated in payment sections or notes. An increase or decrease from the number of units shown in the Bid Form shall not cause a change in the unit price except as allowed by the General Conditions.

1.10 INCIDENTAL ITEMS

- A. Work required by the Contract Documents but not listed as a bid item shall be considered incidental to the Contract.
- B. Clean-up and restoration of all Work areas, storage areas, and traffic and haul routes shall be considered incidental to the Contract, and shall be performed as required by the Contract Documents or as directed by the Engineer.
- C. Repair of new and existing surfaces or features damaged by Contractor's Work operations shall be performed incidental to the Contract, and shall consist of restoration in-kind to the satisfaction of the Engineer.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 29 27

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SECTION 01 29 76
PROGRESS PAYMENT PROCEDURES

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section includes:
 - 1. Format and Preparation of Applications.
 - 2. Submittal Procedures.
 - 3. Substantiating Data.
- B. Related Sections include:
 - 1. General Conditions of the Contract.
 - 2. Section 01 26 00 - Contract Modification Procedures.
 - 3. Section 01 29 76 - Progress Payment Procedures.
 - 4. Section 01 33 00 - Submittal Procedures.
 - 5. Section 01 77 00 - Closeout Procedures.

1.02 FORMAT AND PREPARATION OF APPLICATIONS

- A. Use: Form provided under Contract Documents – Payment Application and Certificate.
- B. Preparation
 - 1. Present required information in typewritten form.
 - 2. Execute certification by signature of authorized officer.
 - 3. Provide dollar value in each column for each line item for portion of work performed and for stored Products.
 - 4. List each authorized Change Order as an extension on Continuation Sheet, listing Change Order number and dollar amount as for an original item of Work.
 - 5. Prepare Application for Final Payment as specified in Section 01 77 00 - Closeout Procedures .

1.03 SUBMITTAL PROCEDURES

- A. Submittals
 - 1. Three (3) copies of each Application for Payment.
 - 2. Updated construction schedule with each Application for Payment.
 - 3. Payment Periods: As stipulated in the Agreement.
 - 4. Submit with transmittal letter as specified for Submittals in Section 01 33 00 - Submittal Procedures.
 - 5. Administrative actions which must precede or coincide with submittal of final application for payment include:
 - a. Submit lien waivers, warranties and bonds, and project record documents with final application for payment.

- b. Completion of all work not included in substantial completion as defined in General and Supplementary Conditions.
 - c. Completion of project closeout procedures as indicated in Section 01 77 00 - Closeout Procedures.
 - d. Removal of temporary facilities and services.
 - e. Removal of surplus materials, rubbish, or similar elements.
 - f. Final cleaning.
 - g. Transmittal of project construction record documents to Owner and Engineer.
 - h. Consent of surety for final payment.
- B. The Owner must approve all pay estimates for construction contracts before payment can be made.

1.04 SUBSTANTIATING DATA

- A. When Engineer requires substantiating information, submit data justifying dollar amounts in question.
- B. Provide one (1) copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
- C. Provide copies of invoice(s) for payment of materials stored on-site. Payment will not be made for materials that are not stored on-site or within a bonded warehouse that has been approved by Engineer and Owner.
- D. Contractor shall supply substantiating information in compliance with federal and state requirements for monthly utilization reports and weekly prevailing wage and labor rates for laborers on-site.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 29 76

SECTION 01 31 13
PROJECT COORDINATION

PART 1 **GENERAL**

1.01 SUMMARY

- A. This Section includes:
 - 1. Coordination and project conditions.
 - 2. Field engineering.
- B. Related Sections include:
 - 1. Section 01 11 00 - Summary of Work.
 - 2. Section 01 29 76 - Progress Payment Procedures.
 - 3. Section 01 33 00 - Submittal Procedures.
 - 4. Section 01 77 00 - Closeout Procedures.

1.02 COORDINATION AND PROJECT CONDITIONS

- A. General:
 - 1. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
 - 2. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
 - 3. Coordinate completion and clean-up of Work of separate sections in preparation for Final Completion and for portions of Work designated for Owner's partial occupancy.
 - 4. Coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
- B. Responsibilities of the Contractor:
 - 1. Afford other Contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their Work.
 - 2. Connect and coordinate Work with other Contractors Work as required by the Contract Documents.
 - 3. As necessary, allocate and coordinate use of Site for field offices and construction trailers and for access, traffic, and parking facilities. Refer to 01 50 00 - Temporary Facilities and Controls for further requirements.
 - 4. Instruct and coordinate the use of temporary utilities and construction facilities.
 - 5. Verify all shop drawing dimensions.
 - 6. Coordinate the Work of the individual Contractors.

7. Submit (and revise) progress schedule in accordance with Section 01 33 00 - Submittal Procedures coordinating the entire project construction schedule.
8. Organize and submit Applications for Payment. Submit applications on EJCDC C-620 or similar, Owner-approved forms for review by Engineer and Owner.
9. Submit shop drawings, product data, and samples in accordance with Section 01 33 00 - Submittal Procedures.
10. Submit request for interpretation of Contract Documents and obtain instructions through Engineer and Owner.
11. Process requests for Change Orders through Engineer and Owner.
12. Organize all closeout submittals and preliminary inspection reports for transmittal to Engineer and Owner. Organize all record drawings and submit to Engineer. Review all drawings before submitting to Engineer and Owner.
13. Notify Engineer and Owner when all trades are ready for final inspection and organize Final inspections.
14. Provide record drawing information to Engineer and Owner.
15. Ensure punch list items are completed prior to scheduling final inspection by Engineer and Owner.

1.03 FIELD ENGINEERING

- A. Control datum for construction is that shown on Drawings.
- B. Contractor shall locate and protect survey control and reference points.
- C. Contractor shall confirm Drawing dimensions and elevations. Notify Engineer and Owner concerning errors or ambiguities.
- D. Contractor shall establish and maintain required elevations, lines, and levels utilizing recognized engineering practices. Obtain services of a licensed surveyor as required to assure Work is installed per Drawing dimensions and elevations.
- E. Site service utilities are shown in their approximate locations on the Drawings. Contractor shall be responsible to field verify all utility locations as required to accommodate construction activities.
- F. Utility construction staking shall be responsibility of Contractor.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 31 13

SECTION 01 31 19
PROJECT MEETINGS

PART 1 **GENERAL**

1.01 SUMMARY

- A. This Section includes:
 - 1. Preconstruction meeting.
 - 2. Site mobilization meeting.
 - 3. Progress meetings.
 - 4. Preinstallation meeting.
- B. Related Sections include:
 - 1. Section 01 11 00 – Summary of Work.
 - 2. Section 01 77 00 – Closeout Procedures.

1.02 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting at the Project Site after Notice of Award.
- B. Attendance required by
 - 1. Contractor.
 - 2. Contractor's superintendent.
 - 3. Owner.
 - 4. Engineer.
 - 5. Major Subcontractor(s).
- C. Agenda:
 - 1. Contract Forms and Conditions of the Contract.
 - 2. Distribution of Contract Documents.
 - 3. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
 - 4. Designation of personnel representing the parties in Contract, and the Engineer.
 - 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 6. Scheduling.
 - 7. Use of premises by Owner and Contractor.
 - 8. Procedures for testing.
 - 9. Procedures for maintaining record documents.
 - 10. Requirements of the primacy agencies.
- D. Engineer will record minutes and distribute copies after meeting within fourteen (14) days to participants and those affected by decisions made.

1.03 SITE MOBILIZATION MEETING

- A. Engineer and Owner will schedule a meeting at the Project Site prior to Contractor occupancy.
- B. Attendance required by:
 - 1. Contractor(s).
 - 2. Contractor's Superintendent(s).
 - 3. Owner.
 - 4. Engineer.
 - 5. Major Subcontractor(s).
- C. Agenda:
 - 1. Use of premises by Owner and Contractor.
 - 2. Owner's requirements and partial occupancy.
 - 3. Construction facilities and controls provided by Owner.
 - 4. Temporary utilities provided by Owner.
 - 5. Survey and building layout.
 - 6. Security and housekeeping procedures.
 - 7. Procedures for testing.
 - 8. Requirements for start-up of equipment.
 - 9. Inspection and acceptance of equipment put into service during construction period.
 - 10. Procedures for maintaining record documents.
- D. Engineer will record minutes and distribute copies after meeting within fourteen (14) days to participants and those affected by decisions made.

1.04 PROGRESS MEETINGS

- A. Engineer will:
 - 1. Schedule and administer meetings at the Project site throughout progress of the Work at weekly intervals, or as deemed necessary by the Engineer or Owner.
 - 2. Make arrangements for hosting meetings.
- B. Attendance required by:
 - 1. Contractor
 - 2. Contractor(s) Job Superintendent.
 - 3. Owner.
 - 4. Engineer.
 - 5. Major Subcontractors and suppliers.
 - 6. Others as appropriate to agenda topics for each meeting.
- C. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.

4. Identification of problems which impede planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding Work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and Work standards.
 12. Effect of proposed changes on progress schedule and coordination.
 13. Other business relating to Work.
- D. Engineer will record minutes and distribute copies within seven (7) days after meeting to participants and those affected by decisions made.

1.05 PREINSTALLATION MEETING

- A. When required in individual Specification sections, convene a preinstallation meeting at the site prior to commencing Work of the section.
1. Require attendance of parties directly affecting, or affected by, Work of the specific section.
 2. Notify Engineer and Owner seven (7) days in advance of meeting date.
 3. Prepare agenda and preside at meeting.
 4. Review conditions of installation, preparation and installation procedures.
 5. Review coordination with related Work.
- B. Engineer will record minutes and distribute copies within fourteen (14) days after meeting to participants and those affected by decisions made.

PART 2 **PRODUCTS**

2.01 NOT USED.

PART 3 **EXECUTION**

3.01 NOT USED.

END OF SECTION 01 31 19

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SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 **GENERAL**

1.01 SUMMARY

- A. This Section includes:
 - 1. Submittal Procedures.
 - 2. Submittal Schedules
 - 3. Construction Progress Schedules.
 - 4. Proposed Products List.
 - 5. Tabulation of Subcontractors.
 - 6. Tabulation of Suppliers.
 - 7. Request for Interpretation.
 - 8. Product Data.
 - 9. Shop Drawings.
 - 10. Samples.
 - 11. Test Reports.
 - 12. Manufacturer's Certificates.
 - 13. Manufacturer's Instructions.
 - 14. Manufacturer's Field Reports.
 - 15. Excessive Shop Drawing Reviews.
 - 16. DBE Compliance.
- B. Related Sections include:
 - 1. Section 01 45 00 – Quality Control.
 - 2. Section 01 77 00 – Closeout Procedures.
 - 3. Section 01 78 23 – Operations and Maintenance Data.

1.02 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer-accepted form.
- B. Sequentially number the transmittal form. Submit revised submittals with original number and a sequential alphabetic suffix.
- C. Contractor shall send each submittal in electronic format to Owner and Engineer for review.
- D. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.
- E. Contractor shall completely review all submittal materials prior to submission to Engineer and Owner. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

- F. Schedule submittals to expedite the Project, and deliver to Engineer and Owner through previously coordinated means (electronic or physical). Coordinate submission of related items.
- G. Engineer will attempt to complete a review of each submittal in a timely manner within 30 calendar days of receipt of each submittal. Failure of Engineer to review a submittal within the estimated review timeframe shall not be basis for the Contractor to request or receive additional Contract Price or Contract Time.
- H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work. Highlight and/or clearly designate specific product details and information so as to confirm product meets or exceeds Specifications.
- I. Provide space for Contractor and Engineer review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements. Clearly transmit Engineer and Owner review comments to suppliers and subcontractors as required to minimize product delivery errors and miscommunications.
- L. Submittals not requested will not be recognized or processed.
- M. Engineer or Owner will review submittals in order received unless Contractor requests, in writing, a revised order of review. A revision in order may add to the length of review time required for previously submitted submittals.
- N. Submittal of more than three major submittals per week may add to the required length of review time. Engineer shall notify Contractor of submittal review scheduling conflicts.

1.03 SUBMITTAL SCHEDULES

- A. Contractor shall submit a schedule of submittal dates for shop drawings, product data, and samples.
- B. The submittal schedule shall identify specification sections and anticipated submittal dates. Indicate any critical submittals and dates for Engineer's and Owner's review.
- C. Provide decision dates for selection of finishes and samples.

1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in duplicate within 15 days after date of Owner-Contractor Agreement.
- B. Revise and resubmit as required.

- C. Submit revised schedules with each Application for Payment, identifying changes since previous version. Application for Payment will not be processed until updated construction schedule has been submitted.
- D. Prepare schedules as a horizontal bar chart with separate bar for each major portion of Work or operation, identifying first workday of each week as well as the proposed start and completion dates of each major portion of Work.
- E. Sheet Size: Minimum 11x17 inches. Larger sizes than 11x17 inches shall be in multiples of 8½x11 inches.
- F. Content
 - 1. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction. Indicate the early and late start, early and late finish, float dates, and duration.
 - 2. Identify each item by Specification section number.
 - 3. Identify Work of separate stages and other logically grouped activities.
 - 4. Provide sub-schedules to define critical portions of the entire schedule.
 - 5. Include conferences and meetings in schedule.
 - 6. Indicate estimated percentage of completion for each item of Work at each submission.
 - 7. Provide separate schedule of submittal dates for shop drawings, product data, and samples, and dates reviewed submittals will be required from Engineer. Allow sufficient time for review by Engineer. Indicate decision dates for selection of finishes.
 - 8. Coordinate content with schedule of values.
- G. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule.
- H. Distribution
 - 1. Distribute copies of reviewed schedules to Project Site file, Subcontractors, suppliers, and other concerned parties.
 - 2. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

1.05 PROPOSED PRODUCTS LIST

- A. Within fifteen (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.

1.06 TABULATION OF SUBCONTRACTORS

- A. Contractor shall submit a complete list of subcontractors who will provide work on the project.
- B. The submitted list shall include the following information for each subcontractor:

1. Name
 2. Address
 3. Type of work to be provided
 4. Applicable specifications sections
 5. Contact person
- C. Contractor's use of specific subcontractors shall be subject to the requirements included in the specifications.

1.07 TABULATION OF SUPPLIERS

- A. Contractor shall submit a list of suppliers who will provide materials, equipment, or components which are integral to the Work.
- B. The submitted list shall include the following information for each subcontractor:
1. Name
 2. Address
 3. Type of work to be provided
 4. Applicable specifications sections
 5. Contact person
- C. Contractor's use of specific suppliers for providing equipment, materials, or components shall be subject to the requirements of the specifications.

1.08 REQUESTS FOR INTERPRETATION

- A. Contractor shall submit in writing all requests for interpretation or for information regarding the Contract Documents on the form provided by the Engineer.
- B. Engineer does not guarantee that a response can be provided in the amount of time requested, but Engineer or Owner shall respond in writing to Contractor's request within a reasonable amount of time given the extent of the request for interpretation of information required.

1.09 PRODUCT DATA

- A. Submitted to Engineer and Owner for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.
- B. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record document purposes described in Section 01 77 00.
- C. Submit the number of copies that the Contractor requires, plus one electronic and (1) copy that will be retained by the Engineer.
- D. Mark each copy to identify applicable Products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

- E. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service of functional equipment and appliances.

1.10 SHOP DRAWINGS

- A. Submitted to Engineer and Owner for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.
- B. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record document purposes described in Section 01 77 00.
- C. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Submit in electronic format for Engineer's and Owner's review. Upon approval, submit one electronic copy that will be retained by the Owner, Engineer, and Engineer's Subconsultant.
- E. All shop drawings shall be submitted through the Contractor in accordance with the procedures outlined in this specification. Shop drawings received from anyone other than through the Contractor will not be reviewed.
- F. Shop drawings shall include data and technical drawings prepared specifically for this Project, including where required, but not limited to the following:
 - 1. Fabrication drawings
 - 2. Installation drawings
 - 3. Shopwork manufacturing instructions
 - 4. Templates or patterns
 - 5. Coordination drawings
 - 6. Schedules
 - 7. Design calculations
- G. Shop drawings shall contain complete detail showing conformance with the Contract Documents and such other specified information as required, including but not limited to the following
 - 1. Related work with applicable cross references
 - 2. Physical configuration
 - 3. Dimensional information, including any variations from actual conditions
 - 4. List of materials
 - 5. Structural construction and assemblies
 - 6. Anchor bolt details showing type, size, embedment, and locations
 - 7. Machinery and equipment details
 - 8. Auxiliary items to machinery and equipment
 - 9. Protective coatings and factory finishes

- 10. Electrical information including motor sizes, wiring and circuit diagrams, and instrumentation
- 11. Testing results
- H. Detail all connections required to complete the Work.
- I. Approval of shop drawings by Engineer and/or Owner shall not relieve the Contractor from responsibility of deviations from drawings or specification, unless deviations or changes have been brought to Engineer's attention at time of submission, nor shall it relieve the Contractor from responsibility for errors or omissions in shop drawings.

1.11 SAMPLES

- A. Submitted to Engineer and Owner for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- B. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record document purposes described in Section 01 77 00.
- C. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- D. Include identification on each sample, with full Project information.
- E. Submit the number of samples specified in individual Specification sections; one (1) of which will be retained by Engineer.
- F. Reviewed samples that may be used in the Work are indicated in individual Specification sections.
- G. Samples will not be used for testing purposes unless specifically stated in the Specification section.

1.12 TEST REPORTS

- A. Submit for the Engineer's knowledge as Contract Administrator or for the Owner.
- B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.
- C. Retain one (1) copy of all test reports and results on-site in a location accessible to Engineer.

1.13 MANUFACTURER'S CERTIFICATES

- A. When specified in individual Specification sections, submit certification by the manufacturer, installation/application Subcontractor, or the Contractor to Engineer, in quantities specified for Product Data.

- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer and Owner.

1.14 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer and 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. Refer to Section 01 45 00 – Quality Control.

1.15 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the Engineer's benefit as Contract Administrator or for the Owner.
- B. Submit report in duplicate within 15 days of observation to Engineer for information.
- C. Submit the manufacturer's field reports for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

1.16 EXCESSIVE SHOP DRAWING REVIEWS

- A. The maximum number of submittal reviews for any one product or specification section shall be two (2).
- B. Compensation for third or subsequent reviews will be required as outlined below:
 - 1. Owner will compensate Engineer for "additional services".
 - 2. Owner will deduct amount of such compensation from payment to Contractor.
 - 3. Engineer's compensation shall be at Engineer's standard hourly rates, plus reimbursable expenses at cost.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 33 00

SECTION 01 45 00
QUALITY CONTROL

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section includes:
 - 1. Quality Assurance - Control of Installation.
 - 2. References and Standards.
 - 3. Testing Responsibilities.
 - 4. Inspection and Testing Services.
 - 5. Mill Tests.
 - 6. Factory Tests.
 - 7. Manufacturer's Instructions.
 - 8. Manufacturer's Certificates.
 - 9. Manufacturers' Field Services.
 - 10. Qualification Tests.
 - 11. Laboratory Tests.
 - 12. Product Field Tests.
 - 13. Material Field Tests.
 - 14. Coating Field Tests.
 - 15. Construction Vibration Monitoring
- B. Related Sections include:
 - 1. Section 01 33 00 – Submittal Procedures.

1.02 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Verify that field measurements are as indicated on Contract Drawings, shop drawings, or as instructed by the manufacturer.
- B. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- C. Completed Work shall be plumb, level, true to line or plane, and free from damage.

1.03 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.

- D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.04 TESTING RESPONSIBILITIES

- A. Contractor's Responsibility:

1. Contractor shall be responsible for all quality control testing or inspections including mill tests, factory tests, qualification tests, laboratory tests, and field tests other than those required and specified in Parts 1.15 and 1.16 below.
2. Quality control required by codes or ordinances, or by the plan approval authority, unless otherwise provided in the Contract Documents.
3. Contractor's convenience testing.
4. Coordinate with each independent agency to accommodate required services with minimum delay in progress of work, and to avoid moving or replacing work. Schedule times for quality control services.

- B. Retesting Responsibility:

1. Where results of quality control prove unsatisfactory and do not indicate compliance with Contract Documents, all costs associated with retesting is the Contractor's responsibility.
2. The costs for retesting of Owner responsible quality control shall be deducted from the Contract amount by supplemental agreement.

1.05 INSPECTION AND TESTING SERVICES

- A. The Contractor shall appoint, employ, and pay for specified services of an independent firm to perform testing including:

1. Concrete materials and mix designs.
2. Concrete formwork.
3. Asphaltic materials and mix designs.
4. Embedment and backfill materials.
5. Weld Radiographs and Weld Inspection Report.

- B. All other tests and engineering data required for Engineer's or Owner's review of materials and equipment proposed to be used in the Work. Contractor shall obtain Engineer's acceptance of the testing firms before having services performed, and shall pay all costs for these testing services. All costs for testing shall be incidental.

- C. The independent firm will perform tests and other services specified in individual specification sections and as required by the Engineer or Owner.

- D. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Engineer or Owner.
- E. Reports will be submitted by the independent firm to the Owner, Building Official, Engineer and Contractor, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- F. The Contractor will select an independent testing agency qualified in accordance with referenced ASTM standards and that is acceptable to the Engineer, if required for certain types of testing.
- G. Comply with pertinent codes, regulations, and industry standards except when more stringent standards or tolerances are specified.
- H. The contractor shall cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Engineer and independent firm 48 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- I. Testing does not relieve Contractor from performing Work according to contract requirements.
- J. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer or Owner. Payment for re-testing will be paid by the Contractor.

1.06 MILL TESTS

- A. Mill or shop tests shall be conducted and test reports submitted where this type of test is specified.
- B. Mill or shop tests shall be accomplished by the manufacturer or fabricator of the materials. Mill tests may be conducted by an independent testing laboratory. These tests shall be performed in accordance with applicable ASTM standards.

1.07 FACTORY TESTS

- A. Factory tests of process, mechanical, and electrical equipment relative to performance, capacity, rating, efficiency, or other such requirements shall be conducted in the factory or shop for each item supplied when this type of test is specified.
- B. Factory testing shall be performed in accordance with applicable standards and test codes.
- C. Where factory tests are required or specified, reports of the test results shall be submitted to Engineer for approval prior to shipment. Contractor shall submit the

number of test reports for approval required by the Contractor plus four (4) copies to be retained by the Engineer.

- D. Factory observation of fabrication procedures, materials used, and testing methods may be performed by a representative of the Owner or Engineer. Contractor shall pay for factory observation.

1.08 MANUFACTURERS' INSTRUCTIONS

- A. Comply with manufacturer's instructions in full detail for storage, installation, assembly, installation, start-up, and adjustment. Contractor shall follow appropriate sequencing as recommended by manufacturer.
- B. Should manufacturer's instructions conflict with Contract Documents, Contractor shall request clarification from Engineer prior to proceeding.
- C. If required by individual product or equipment specification sections, Contractor shall submit manufacturer's printed instructions prior to assembly and installation.

1.09 MANUFACTURERS' CERTIFICATES

- A. Submit manufacturer's certificate indicating that equipment or products meet or exceed specified requirements where required in the individual specification sections.
- B. Certificates shall be submitted prior to shipment of equipment or products.

1.10 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and other services as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Engineer and Owner 30 days in advance of required observations. Observer subject to approval of Engineer or Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Refer to Section 01 33 00 - Submittal Procedures.

1.11 QUALIFICATION TESTS

- A. Should a product, material, or method for assembly of unknown or questionable quality to the Engineer or Owner be proposed by the Contractor, additional tests may be required by the Engineer or Owner.
- B. Additional testing as required by the Engineer or Owner shall be used as a basis to establish acceptance or rejection.

1.12 LABORATORY TESTS

- A. Laboratory tests shall be conducted and test reports shall be submitted where this type of test is specified. All laboratory tests shall be made by an independent laboratory approved by the Engineer. These tests shall be performed in accordance with applicable ASTM standards.
- B. Laboratory tests may be witnessed by representatives of the Owner or Engineer.
- C. Submit two (2) copies of all laboratory tests to the Engineer and Owner for record.

1.13 PRODUCT FIELD TESTS

- A. Product field tests shall be set up and completed by the Contractor. Contractor shall provide all tools, equipment, instruments, personnel, and other facilities required for the completion of each test.
- B. Product field tests of process equipment, mechanical systems, electrical systems, piping systems, and similar facilities shall be conducted where this type of test is specified.
- C. Product field tests include the determination of performance, capacity, efficiency, function, tightness, leakage, and other special requirements. Product field tests shall be performed in accordance with applicable standards and test codes.
- D. Product field tests may be witnessed by representatives of Owner and Engineer.
- E. Submit two (2) copies of all product field tests to the Engineer and Owner for record.

1.14 MATERIALS FIELD TESTS

- A. Routine tests of materials incorporated into the Project will be performed by an independent testing laboratory arranged and paid for by the Contractor and acceptable to the Engineer. Contractor is responsible for including the cost of testing in their Bid.
- B. Results of materials field testing shall be reported to the Engineer and Contractor.
- C. Material field tests may be witnessed by representatives of the Owner, Engineer, and Engineer's subconsultant and such witnessing shall be paid for by the Owner.
- D. At the Owner's discretion, the following inspections and testing may be conducted by the independent testing laboratory hired by the Contractor and accepted by the Engineer with results being reported to the Contractor, Owner, and Engineer. Contractor shall coordinate with Owner to determine testing requirements.

1. See Structural Special Inspection Tables on Drawings for additional requirements.
2. Excavating, Filling, and Grading Soil Compaction Testing:

Item	Frequency
Building or Structure Sites and Roadway and Parking Area Subgrade Preparation (excavation areas)	One (1) approved test per 1,000 sf of any area that indicate soil bearing capacity as required.
Roadway and Parking Area Subgrade Preparation (fill areas)	One (1) approved test per 2,000 sf per 4-foot lift.
Building or Structure Sites (fill areas)	One (1) approved test per 1,000 sf per 8-inch compacted lift of all fill materials.
Utility and Piping Trenches	One (1) approved test per 500 feet of mainline pipe at 4-foot from top of pipe/bedding, and at staggered 4-foot intervals up to and including the top of subgrade.
Aggregate Base	Proof roll all pavement areas.
Parking Areas and Sidewalks	Proof roll all areas subject to vehicle traffic.

3. Bituminous Specimens:
 - a. Obtain samples of placed bituminous prior to bituminous being rolled at the rate of one (1) sample per 100-ton of each mix placed per lift with a minimum of one (1) sample per mix per lift per day. Contractor shall cooperate with Engineer in obtaining the samples.
 - b. Perform testing for gradation and extraction on each sample.

1.15 COATINGS FIELD TESTS

- A. At the Owner's discretion, an independent testing company hired by the Contractor may provide testing of coatings and coating systems. Contractor shall pay for testing of coatings and coating systems.

1.16 CONSTRUCTION VIBRATION MONITORING

- A. Vibration producing activities (such as blasting, pile driving, vibratory compaction, pavement breaking or operation of heavy construction equipment) may be required for construction of this project. The Contractor is advised that structures are located close to the proposed work and that construction activities shall be conducted so as to preclude damage to these structures and undue annoyance to occupants. The contractor shall be responsible for all damage caused by his activities

PART 2 **PRODUCTS**

NOT USED.

PART 3 **EXECUTION**

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION 01 45 00

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SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section Includes:
 - 1. Temporary Controls.
 - a. Noise Control
 - b. Road Cleaning
 - 2. Traffic Control.
 - 3. Protection of Installed Work.
 - 4. Temporary Construction Protection.
 - 5. Security.
 - 6. Parking.
 - 7. Progress Cleaning and Waste Removal.
 - 8. Removal of Utilities, Facilities, and Controls.
- B. Related Sections include:
 - 1. Section 01 11 00 – Summary of Work.
 - 2. Section 01 61 00 – Common Product Requirements.
 - 3. Section 01 77 00 –Closeout Procedures.

1.10 TEMPORARY CONTROLS

- A. Noise Control
 - 1. Contractor shall obtain all necessary noise permits from the County Health Department for construction during after hours. Contractor shall obtain and provide electronic copies of permit to owner and engineer and keep a copy of the permit during construction.
- B. Storm Water Permits
 - 1. Contractor shall obtain all necessary permits from Watershed Districts or responsible regulatory agencies for temporary erosion control measures. Contractor shall obtain an NPDES storm water permit for construction disturbing more than one acre of area in conjunction with the OWNER.
 - 2. Contractor shall provide and maintain all best management practices necessary for erosion prevention, sediment control, dewatering and basin draining, and pollution prevention management measures at the Site in accordance with the requirements of the NPDES Storm Water permit and associated storm water pollution prevention plan (SWPPP) to be submitted to the MPCA following award of the contract and prior to beginning construction.
 - 3. The SWPPP requirements are outlined in the project civil drawings and provide general best management practices that will be included in the SWPPP submitted to the MPCA. The SWPPP and NPDES shall be located at the site at all times during the construction. Contractor shall meet the general requirements as outlined in the project drawings and any additional requirements required as a part of the review and approval

of the NPDES storm water permit and SWPPP.

C. Dewatering and Basin Drainage:

1. Grade site to drain and maintain excavations free of water.
2. Dewatering and basin draining must discharge to a temporary or permanent sedimentation basin.
3. Provide, maintain, and operate pumping equipment as required.
4. Prevent erosion and scour at dewatering or pumping locations, disperse over natural rock riprap, sand bags, plastic sheeting, or other accepted measures.
5. Provide water barriers as required to protect site from soil erosion.

D. Noise Control:

1. Contractor shall be responsible for noise control throughout the duration of the Project.
2. Avoid the use of tools and equipment which produce harmful noise.
3. Restrict the use of noise making tools and equipment to required hours of construction.

E. Road Cleaning:

1. As required, the Contractor shall sweep or clean all roads and streets that are affected by vehicle traffic entering or leaving the site.

1.11 TRAFFIC CONTROL

- A. The Contractor shall furnish, install and maintain required pavement marking material, barricades, lighting devices, flags, channelizing devices, signals, signs, markers and delineators.
- B. The Contractor shall provide a sufficient number of flaggers and take necessary precautions for protection of workers, work area and public safety.
- C. All traffic control devices shall be kept in proper position, clean and legible at all times. Damaged devices shall be promptly replaced.
- D. Traffic control devices shall be promptly removed or covered when the need for such devices no longer exists.
- E. Warning lights, when required, shall operate whenever the hazard or regulation requirement exists.
- F. The Traffic Control work shall be developed in accordance with the Federal Highway Administration, "Manual on Uniform Traffic Control Devices" (MUTCD) Part IV, latest edition.
- G. Signs, barricades, barrels, delineators, vertical panels and other traffic control devices, except signs or cones used only during daylight hours, shall be reflectorized with high intensity (Type III) sheeting applied to a satisfactory backing. Signs, barricades, delineators and vertical panels shall be readable to the traveling public. The Contractor shall certify that the sheeting meets the requirements of AASHTO M 268.

- H. Barricades, delineators, vertical panels, cones, drums, tubular markers and temporary road markers used to separate opposing traffic shall be bi-directional.
- I. Designated Traffic Control Person

1. The Contractor shall designate a person in his employ who shall be responsible for the inspection, repair reinstallation, removal, relocation, or other work needed to maintain necessary traffic controls. The Contractor shall provide for inspection of all traffic controls at least once every calendar day throughout the project time.
- J. Traffic Control Device Usage
1. Traffic control devices shall be promptly removed, covered, or turned to face away from the traffic when the need for such devices no longer exists. Portable signs which are turned to face away from the roadway shall be moved off the shoulder area as a safety precaution. Signs shall not be visible from another travel direction.
- K. Warning Lights
1. Warning lights, when required, shall be 8" in diameter and operate during hours when the hazard or need for regulation exists.
 2. Warning lights may be operated singly or in groups containing more than one (1) unit. When more than (1) unit is used, they shall be horizontally aligned and flashed simultaneously or vertically aligned and flashed alternately.
 3. When used in conjunction with signs, the lights shall not be located within the face of the sign nor more than twelve inches (12") above the top of the sign. When used with barriers and channelizing devices, the beacon shall be at least three feet (3') and not more than six feet (6') above the pavement.
- L. Driveways and Private Roads
1. The Contractor shall maintain reasonable and continuous vehicular access to all private properties adjacent to work areas. The Contractor shall coordinate with adjacent property owners to inform owners of construction activities and to determine access needs for each property.
 2. The Contractor should anticipate that work affecting driveways and access to private properties and business may require that work be staged in a way that property owners are inconvenienced to the minimum extent practical.
 3. Where multiple driveways to a property exist, the Contractor may close driveways, but should attempt to minimize the time the driveway is obstructed. Where single driveways exist, the Contractor shall maintain one traffic lane open at all times and shall stage the work to minimize property owner inconvenience.
- M. Changes in Construction Activities and Traffic Control
1. The Contractor shall change the location of traffic control devices and/or the devices in order to keep them current with the construction requirements and construction activity taking place.

1.12 PROTECTION OF INSTALLED WORK

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

- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

1.13 TEMPORARY CONSTRUCTION PROTECTION

- A. Shoring and Bracing:
 - 1. Contractor shall provide and maintain temporary supports, shoring, and bracing as required for protection of work.
 - 2. Contractor shall assure the adequacy of all temporary shoring and bracing.
 - 3. Repair or replace damaged work occasioned by inadequate temporary supports, shoring, or bracing.
 - 4. Leave temporary supports, shoring, and bracing in place until permanent construction is complete to point where installed work is properly supported.

1.14 SECURITY

- A. Provide security and facilities to protect Work, and existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.
- C. Unexpected deliveries pose security concerns; therefore, Contractor shall inform Engineer and Owner of all equipment deliveries at least 24 hours in advance of equipment/material arrivals scheduled for delivery to Owner occupied facilities.
- D. Security will be the Contractor's responsibility for any Work occurring after normal operating hours. Upon completion of this Work, Contractor shall ensure Plant doors and gates are locked and secure. No claims shall be made against Engineer or Owner for any act of an employee or trespasser, and Contractor shall make good on any damage to Owner's property, resulting from Contractor's failure to provide sufficient security in the absence of the Engineer and Owner.
- E. Contractor to discuss security with his employees and sub-contractors and advise them to immediately report anything suspicious which could be a security issue.

1.15 PARKING

- A. Contractor and personnel shall park all personal vehicles in an area acceptable to Owner and applicable property owners.
- B. Do not block or hinder access to local property, driveways, or walkways..

1.16 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum daily and mop weekly. Clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust. If Owner is not satisfied with Contractor's cleaning efforts, Owner reserves the right to charge Liquidated Damages for charges from a 3rd Party to appropriately clean the plant.
- D. Collect and remove waste materials, debris, and rubbish from site weekly and dispose off-site.
- E. Contractor shall salvage all existing pumps and blowers and shall store them on the site at a location to be determined by the Owner, where the Owner will retain possession of the items. At the discretion of Owner, Contractor shall salvage select control panels and shall store them on the site at a location to be determined by the Owner, where the Owner will retain possession of the items.
- F. Contractor shall maintain site clean and free of obstructions that may cause injuries or otherwise prevent staff (Owner, Engineer, Contractors, etc.) from performing their job effectively.

1.17 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials, prior to Final Application for Payment inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 50 00

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SECTION 01 61 00
COMMON PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This Section includes:
 - 1. Products.
 - 2. Transportation and Handling.
 - 3. Storage and Protection.
 - 4. Product Options.
 - 5. Substitutions.
- B. Related Sections include, but are not limited to:
 - 1. Bidding Documents - Instruction to Bidders.
 - 2. General Conditions of the Contract.
 - 3. Supplementary General Conditions.
 - 4. Section 01 45 00 – Quality Control.

1.02 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying, and erection of the Work. Products may also include existing materials or components designated for re-use.
- B. All products that may come into contact with water intended for use in a public water system shall meet American National Standards Institute (ANSI)/National Sanitation Foundation (NSF) International Standards 60, 61, 600, and 372, as appropriate. A product will be considered as meeting these standards if so certified by NSF, the Underwriters Laboratories, or other organization accredited by ANSI to test and certify each product.
- C. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- D. Provide interchangeable components of the same manufacturer for components being replaced.
- E. Equipment covered by Division 26 shall be listed by UL, or by a nationally recognized third party testing laboratory. All costs associated with obtaining the listing shall be the responsibility of the Contractor. If no third-party testing laboratory provides the required listing, an independent test shall be performed at Contractor's expense. Before the test is conducted, Contractor shall submit a copy of the testing procedure to be used.
- F. Premium and High Efficiency Products

1. Premium and High Efficiency Products shall be as specified in their associated technical specifications.

1.03 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.04 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.
- D. For exterior storage of fabricated Products, place on sloped supports above ground.
- E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.
- J. Contractor shall be responsible to arrange for, receive, inspect, and unload all shipments of materials or equipment. Contractor shall provide haul route information to shipping companies.

1.05 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.

- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with an option for an "Or Equal" or "Approved Equivalent" or "Prior Approved Equivalent" Manufacturer: Submit a request for the "or equal/approved equivalent" in accordance with the following substitutions article. Requests and Engineer's acceptance of "Or Equal" or "Approved Equal" or "Prior Approved Equivalent" Manufacturers is allowed during bidding only.

1.06 SUBSTITUTIONS

- A. Equal" or "Approved Equivalent" or "Acceptable" or "Prior Approved Equivalent" products will be considered **only** if written request is made to the Engineer at least **14** days prior to Bid opening.
- B. Substitutions will be considered when a Product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Bidder: Contractor:
 - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 2. Will provide the same warranty for the Substitution as for the specified Product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Owner and Engineer for redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
 - 1. Submit two copies of request for consideration. Limit each request to one proposed Substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
 - 3. Fully identify the substitutions effects on all facets of the Work and construction schedule.
 - 4. The Engineer or Owner will notify Contractor in writing of decision to accept or reject request.
 - 5. Accepted substitutions will be listed by addendum.

PART 2 **PRODUCTS**

2.01 UNIFORMITY

- A. For any type of similar equipment, i.e., motors, drive units, etc., provide equipment of the same manufacturer.
- B. Inform all subcontractors and suppliers of the selected manufacturers to ensure equipment uniformity.
- C. Obtain each separate type of product from the same manufacturer.

2.02 TOOLS

- A. For any equipment or equipment components requiring special tools, the Contractor shall supply the Owner with such tools to allow for the maintenance and removal/replacement of equipment components.

2.03 CONSUMABLES

- A. Provide Owner with all consumable items that are required during start-up and initial operation (90 days minimum) of all Project components including, but not limited to; coolant, fluids, oil, grease, other lubricants, filters, bulbs, batteries, etc.

PART 3 **EXECUTION**

3.01 INSTALLATION

- A. Install all equipment in full compliance with the manufacturer's recommendations.
- B. Obtain services of qualified and approved factory representatives to install, check, and approve the installation of all equipment.
- C. Service representative:
 - 1. Present for the start-up and initial operation of all equipment.
 - 2. Certify in writing that:
 - a. Equipment is properly installed and ready for operation.
 - b. Equipment properly aligned.
 - c. Direction of rotation checked.
 - d. Lubrication is proper.
 - e. Unit is free from undue stress from connecting pipe or anchorage.
 - f. Unit has operated at full load conditions.
 - g. Unit has operated in full compliance with the project specifications and the manufacturer's recommendations.

END OF SECTION 01 61 00

SECTION 01 73 29
CUTTING AND PATCHING

PART 1 **GENERAL**

1.01 SUMMARY

- A. This Section includes:
 - 1. Requirements and limitations for cutting and patching of Work.
- B. Related Sections include:
 - 1. Section 01 11 00 – Summary of Work.
 - 2. Section 01 33 00 – Submittal Procedures.
 - 3. Section 01 61 00 – Common Product Requirements.
 - 4. Individual Product Specification Sections:
 - a. Cutting and patching incidental to Work of this Section.
 - b. Advance notification to other Sections of openings required in Work of those Sections.

1.02 SUBMITTALS

- A. Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor(s).
- B. Include in request:
 - 1. Identification of Project.
 - 2. Location and description of affected Work.
 - 3. Necessity for cutting or alteration.
 - 4. Description of proposed Work and Products to be used.
 - 5. Alternatives to cutting and patching.
 - 6. Effect on work of Owner or separate contractor(s).
 - 7. Written permission of affected separate contractor(s).
 - 8. Date and time Work will be executed.

PART 2 **PRODUCTS**

2.01 MATERIALS

- A. Those required for original installation.
- B. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 61 00 – Common Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing Work, assess conditions affecting performance of Work.
- C. Understand and become familiar with required coating systems, application requirements, and spatial concerns, issues, and dimensions required to perform the Work.
- D. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas that may be exposed by uncovering Work.
- C. Maintain excavations free of water.
- D. Verify that all materials are clean and free from defects.

3.03 CUTTING

- A. Execute cutting and fitting to complete the Work.
- B. Uncover work to install improperly sequenced Work.
- C. Remove and replace defective or non-conforming Work.
- D. Remove samples of installed Work for testing, when requested.
- E. Coordinate openings in the Work for penetration of mechanical and electrical Work.
- F. Employ original installer of new Work to perform cutting for weather exposed and moisture resistant elements, and sight-exposed surfaces. Employ experienced personnel or original supplier for applying specialized coating systems.
- G. Cut rigid materials, masonry, prestressed concrete, and concrete using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.04 PATCHING

- A. Execute patching to complement adjacent Work.
- B. Fit Products together to integrate with other Work.
- C. Execute Work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

- D. Employ original installer of new Work to perform patching for weather and moisture resistant elements, and sight-exposed surfaces.
- E. Restore Work with new Products in accordance with requirements of Contract Documents.
- F. Fit Work airtight and water tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- H. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- I. Identify any hazardous substance or condition exposed during the Work to the Architect/Engineer for decision or remedy.

3.05 ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in Product sections; match existing Products and Work for patching and extending Work.
- B. Employ skilled and experienced installer to perform alteration Work.
- C. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.
- D. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring Products and finishes to original or specified condition.
- E. Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with a neat transition to adjacent finishes.
- F. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- G. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Engineer for review.
- H. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition; to Engineer for review request instructions from Engineer.
- I. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections.
- J. Finish surfaces as specified in individual Product Sections.

END OF SECTION 01 73 29

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SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 **GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Closeout Procedures.
2. Substantial Completion.
3. Final Completion.
4. Certificate of Occupancy.
5. Final Cleaning.
6. Project Record Documents.
7. Spare parts and Maintenance Products.
8. Warranties and Bonds.
9. Maintenance Service.
10. Final Adjustment of Accounts.

B. Related Sections include:

1. General Conditions of the Contract.
2. Supplementary General Conditions.
3. Section 01 31 13 – Project Coordination.
4. Section 01 50 00 – Temporary Facilities and Controls.
5. Section 01 75 00 – Starting and Adjusting.
6. Section 01 78 23 – Operation and Maintenance Data.

1.02 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's and Owner's review.
- B. Provide submittals to Engineer and Owner that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Owner will occupy all portions of the Project.

1.03 SUBSTANTIAL COMPLETION

- A. Prior to substantial completion, Contractor shall review Contract Documents for items which are not complete or need to yet be completed including submittal of all manuals, and testing reports. Contractor shall make a list of incomplete work, a value of the incomplete work, and reasons why work is incomplete. Contractor shall complete all items required to be completed as part of substantial completion.

- B. Contractor shall provide a written notice to Engineer and Owner that the work, or specific portions of the work, is substantially complete and ready for review. If there are any items remaining to be corrected or completed, Contractor shall submit a list of these items along with the notice of substantial completion. Along with the list of items, the Contractor should provide a written explanation of why these items are not considered necessary for substantial completion.
- C. Upon receipt of notice of substantial completion, Engineer will proceed with inspection for substantial completion.
- D. Following the substantial completion inspection by the Engineer or Owner, Engineer or Owner will either prepare certificate of substantial completion, or notify the Contractor in writing that substantial completion has not been meant listing the various reasons.
- E. Contractor shall promptly complete the items required to meet substantial completion and submit a second notice of substantial completion to the Engineer.
- F. Engineer or Owner will review the work a second time to determine the status of substantial completion.
- G. When Engineer or Owner considers the project to be substantially complete, Engineer or Owner will prepare the preliminary certificate of substantial completion along with a substantial completion punch list of items to be completed prior to final payment. If the preliminary certificate of substantial completion is prepared by the Engineer, Engineer will deliver preliminary certificate and punch list to Owner and consider any objections by the Owner as provided in the Conditions of the Contract.
- H. Upon agreement by Owner and Engineer of substantial completion and punch list items, Engineer or Owner will execute and deliver to the Contractor and Owner, if applicable, a final certificate of substantial completion along with substantial completion punch list of items to be completed prior to final payment.
- I. A maximum of two (2) reviews of substantially complete work will be completed by Engineer and Engineer's subconsultants for any one portion of work under the Contract. Should subsequent reviews be necessary, the following requirements will be met:
 - 1. Owner will compensate Engineer for additional reviews.
 - 2. Owner will deduct the amount of compensation paid to the Engineer for additional reviews from the payment to the Contractor.
 - 3. Compensation shall be at Engineer's standard hourly rates plus actual cost of reimbursables.

1.04 FINAL COMPLETION

- A. Following substantial completion, Contractor shall complete remaining work and items to be corrected as part of substantial completion punch list as well as final cleaning and transferring site to Owner.
- B. When Contractor considers that all work is complete, Contractor shall provide written notice of final completion to Engineer and Owner.
- C. Following receipt of final completion certification, Engineer, Engineer's subconsultants, and Owner shall review the work to verify that the requirements for final completion have been met.
- D. Upon review of work for final completion, Engineer or Owner will either request the Contractor to make closeout submittals or will notify Contractor that the work is not complete with a list of incomplete or defective work. Contractor shall promptly take steps to correct all listed deficiencies and incomplete work before sending a second written notice of final completion certification to Engineer or Owner.
- E. If final completion was not met following first review, Engineer or Owner will review work a second time to determine if the requirements for final completion have been met.
- F. A maximum of two (2) reviews of final complete work will be completed by Engineer and Engineer's subconsultants for any one portion of work under the Contract. Should a third or subsequent reviews be necessary the following requirements will be met:
 - 1. Owner will compensate Engineer for additional reviews.
 - 2. Owner will deduct the amount of compensation paid to the Engineer for additional reviews from the payment to the Contractor.
 - 3. Compensation shall be at Engineer's standard hourly rates plus actual cost of reimbursables.
- G. When Engineer or Owner considers all work to be complete in accordance with the Contract Documents, Engineer or Owner shall request the Contractor to make closeout submittals.

1.05 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains, and foreign substances, polish transparent and glossy surfaces, mop all floors.
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Replace filters of operating equipment.

- E. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.06 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling current and future reference by Owner and Engineer.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract drawings.
- G. Submit documents to Engineer with claim for final Application for Payment.

1.07 SPARE PARTS AND MAINTENANCE PRODUCTS

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

1.08 WARRANTIES AND BONDS

- A. Provide duplicate notarized copies.

- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in D size three ring binders with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance.

1.09 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components during the warranty period.
- B. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- D. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

1.10 FINAL ADJUSTMENT OF ACCOUNTS

- A. Contractor shall submit a final statement of accounting to Engineer. Statement shall reflect all adjustments to the contract sum and include the following:
 - 1. Original contract sum.
 - 2. Additions and deductions resulting from:
 - a. All previous change orders
 - b. Allowances
 - c. Unit prices
 - d. Deductions for uncorrected work
 - e. Penalties and bonuses
 - f. Deductions for liquidated damages
 - g. Deductions for multiple reviews
 - h. Other adjustments
 - 3. Total contract sum as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- B. Engineer will prepare a final change order, reflecting approved adjustments to the contract sum which were not previously made by change orders.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 77 00

SECTION 31 05 05
SITWORK DEMOLITION AND REMOVAL

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. The removal and satisfactory disposal of pavement materials including concrete pavement, asphalt pavement, concrete driveways, sidewalks, curb and gutter, aggregate base, and geotextile fabric.
 - 2. The removal and disposal of designated utility structures, pipes, and related appurtenances.
 - 3. The removal or disposal of existing fence.
- B. Related Sections include, but are not limited to:
 - 1. Section 01 11 00 – Summary.
 - 2. Section 01 31 00 – Coordination and Meetings.
 - 3. Section 01 45 00 – Quality Requirements.
 - 4. Section 01 50 00 – Construction Facilities and Temporary Controls.
 - 5. Section 32 97 00 – Restoration of Disturbed Areas

1.02 PROTECTION

- A. Confine Work and stockpiling to within designated areas on the Owner's property as approved by Engineer. Leave undisturbed all pavement and utility appurtenances not indicated for removal or renovation.
- B. Maintain proper positive drainage during construction operations and through completion.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

3.01 PREPARATION

- A. Inspect and record existing conditions on site and at adjacent areas prior to starting construction.
- B. Become familiar with required lines of removal and saw cutting.
- C. Identify underground utilities.
- D. Provide, erect, and maintain adequate barriers and warning lights.
- E. Protect and maintain survey monuments or any construction staking from disturbance during pavement removal.

- F. Keep streets, sidewalks, alleys, and driveways in usable condition; avoid property owner inconvenience insofar as practicable; do not trespass on private property.
- G. Verify traffic control in place prior to commencement of pavement removal.
- H. Commencement of this Section's Work means acceptance of existing conditions.
- I. Obtain all necessary permits and notify all necessary agencies prior to removal of septic tank.

3.02 REMOVAL

- A. Saw cutting is required on all concrete and asphalt pavements.
- B. Saw cut vertically full depth to obtain a clean break. Remove on straight lines approximately parallel or perpendicular to centerline or pavement.
- C. Remove curb and gutter where indicated on Drawings, or as necessary to accomplish Contractor's work.
- D. Disturbances, breakage, or damage to areas not designated for removal shall be restored at Contractor's expense prior to final payment.
- E. Pavement removed beyond the limits established shall be replaced to the same specifications as the adjacent removal at Contractor's expense.
- F. Remove entire width of sidewalk if replacement width is less than sidewalk width.
- G. Remove abandoned utility structures, pipes, and related appurtenances where indicated on the drawings or encountered by new construction. Fill trenches with Type S1, or S2 material, and compact to a minimum of 96% of maximum dry density determined by ASTM D698 (Standard Proctor).
- H. Where abandoned pipes are to remain in place, plug all exposed ends with concrete.
- I. Where abandoned structures are to remain in place, plug all pipe penetrations with concrete and fill structure with Structural Fill material.

3.03 TOLERANCES

- A. Saw cut full depth of pavement to achieve a clean break.
- B. If required line of asphalt removal falls within 2 feet of an existing joint or travel lane pavement marking, adjust line of removal to be the existing joint or lane edge.
- C. Concrete pavement, sidewalk, paths and curb and gutter shall be removed to the nearest joint regardless of removal limits necessary for trenching, excavation and/or installation.

3.04 DISPOSAL

- A. Remove broken pavement, pipes, utility structures, and appurtenances, and dispose of materials off site in Contractor furnished disposal area in a manner that is acceptable to local authorities and regulatory agencies.

END OF SECTION 31 05 05

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SECTION 31 05 13
SOILS FOR EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Subsoil materials.
 - 2. Topsoil materials.
- B. Related Sections include:
 - 1. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to work of this section.
 - 2. Division 01 - General Requirements.
 - 3. Division 31 - Earthwork.
 - 4. Division 32 - Exterior Improvements.
 - 5. All other items associated with trenching and backfill, see Kearns Improvement District Design Standards & Construction Specifications

1.02 SUBMITTALS FOR REVIEW

- A. See Section 01 33 00 - Submittal Procedures.
- B. Samples: In accordance with Section 01 45 00 - Quality Control.

1.03 QUALITY ASSURANCE

- A. Section 01 45 00 - Quality Control: Field Samples.
- B. Material Source: Provide materials from the same source throughout the Work. Change of source requires Engineer approval.

PART 2 PRODUCTS

2.01 SUBSOIL MATERIALS

- A. Subsoil: Uncontaminated excavated on-site material or imported borrow material. Graded free of lumps larger than 3 inches, rocks larger than 2 inches for ductile iron pipe installation and 3/4 inches for plastic pipe installation, and debris; non-plastic and inorganic material.
 - 1. Type S1: Fine sand and gravel, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Conforming to ASTM D2487 Group Symbol GM, GC, SM, SC, SP, SW, or dual symbol groups.
 - 2. Type S2: Silt, silty-clay, inorganic clays, and silts of low to medium plasticity and a maximum liquid limit of 40. Conforming to ASTM D2487 Group Symbol CL, ML, or dual symbols thereof.
 - 3. Type S3: Plastic to highly plastic clays and clay-silt materials of medium to high plasticity Conforming to ASTM D2487 Group Symbol CH, and MH or dual symbols thereof.

4. Unsuitable soils: All frozen material, vegetation, trash, rocks, and concrete and bituminous chunks having a dimension exceeding 3 inches and otherwise not meeting the specifications of soil materials.

2.02 TOPSOIL MATERIALS

- A. Topsoil: Uncontaminated excavated on-site material or imported borrow material; Graded free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds, and foreign matter.
 1. Type S4: Imported or Re-used; Conforming to ASTM D2487 Group Symbol OL and OH and meets requirements of Section 02912 of the latest edition of the Utah Department of Transportation Standard Specifications for Road and Bridge Construction.

2.03 SOURCE QUALITY CONTROL

- A. Section 01 45 00 - Quality Control: Testing and analysis of soil material.
- B. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D698 and ASTM D6938.
- C. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D2487.
- D. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

NOT USED.

END OF SECTION 31 05 13

SECTION 31 23 13
SUBGRADE PREPARATION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Scarifying, compacting, and shaping the earth subgrade below pavements and structures.
2. Perform subgrade preparation on all areas to receive structures (including foundation rock), asphalt pavement, aggregate base course, and/or aggregate surface course.

B. Related Sections:

1. Drawings and general provisions of Contract, including General Conditions, apply to work of this section.
2. Division 01 - General Requirements.
3. Division 31 - Earthwork.

PART 2 PRODUCTS

2.01 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to approval of the Engineer.
- B. Suitable Soil Materials: On-Site excavated material or imported material meeting subsoil classification Type S1, S2, or S3 as defined in Section 31 05 13, free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.

PART 3 EXECUTION

3.01 GENERAL

- A. Subgrade Preparation shall consist of producing a firm and stable subgrade prior to placement of the surface or base course.

3.02 SUBGRADE PREPARATION

- A. The Contractor shall compact and shape the subgrade for its full width as may be necessary to produce, at the time the base course is placed, the required density in the upper 12-inches of the base and the required grade and cross-section.
- B. Contractor shall be responsible for drying the subgrade soil or applying water as may be responsible for grading the Work area and providing drainage so that accumulating water will drain away from the subgrade.

1. After general site stripping and excavation has been completed, exposed soils should be proof-rolled with a tandem axle dump truck loaded to at least 25-ton weight. Truck shall traverse the structure and pavement footprint to detect areas of loose or soft soils as observed by the Engineer or the corresponding representative.
 2. Loose or soft soils shall be defined as soils exhibiting "excessive rutting" from the truck tires (approximately 1-inch) wheel rut depth.
 3. Soft or unstable soils encountered during proof-rolling should be over-excavated and replaced with Structural Fill or Untreated Base Course as defined by UDOT Standard Specifications Chapter 5.
 4. The over-excavation depth should extend to competent soil as assessed by the Engineer or corresponding representative.
 5. Over-excavated areas should be backfilled with Structural Fill.
 6. Following proof-rolling, the exposed subgrade soils should be scarified to a minimum depth of 6 inches, moisture-conditioned to near optimum moisture content (+/- 2 percent of optimum) and compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM D1557 (Modified Proctor).
- C. All subgrades below structures shall be cut to the final depth with a smooth-edged backhoe or other equipment that will minimize disturbance to the subgrades.
- D. Subgrades below structures shall not be scarified or re-compacted. All disturbed clay soils must be removed and replaced with Type S1 soils.
- E. If areas are encountered that cannot be compacted, sub-excavate unstable materials and replace with Type S1 soil materials.
- F. Contractor shall be responsible for drying the subgrade soil or applying water as may be necessary to obtain the required density. Contractor shall also be responsible for grading the Work area and providing drainage so that accumulating water will drain away from the subgrade.
- G. The finished subgrade surface shall be smooth and uniform and shall not rut, shove, flex, or displace when any construction equipment is placed on it.
- H. The required grade and cross-section for subgrades shall consist of a smooth subgrade surface that conforms to the prescribed elevations for the particular subgrade being prepared, prior to constructing an additional course thereon. The required grade and cross-section for rough graded surfaces shall consist of a smooth graded surface that conforms to the prescribed elevations for that particular rough grade being prepared. The prescribed elevation for any point on the subgrade or rough graded surfaces shall be as determined from the grades staked by the Engineer.
- I. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction

due to subsequent construction operations, vehicular traffic, or weather conditions.

- J. Surface or base course and embankment fill shall not be placed on subgrades until the subgrade has been tested and Contractor has proven that the requirements specified herein have been met. Upon completion of a successful test, Contractor shall maintain the subgrade and repair any damage prior to placing subsequent materials.
- K. Subgrade preparation shall apply to all pipe trenches, concrete manholes, concrete slabs, pond areas, paved and graveled areas, including roads, driveways, parking areas, sidewalks, and ramps.
- L. Testing requirements for subgrade preparation shall be as follows:
 - 1. Shall conform to requirements of Section 01 45 00.

3.03 TOLERANCES

- A. Finish subgrade or rough graded surfaces shall not deviate by more than 1 inch from the required section and grade.

END OF SECTION 31 23 13

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SECTION 31 23 19
DEWATERING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Provision and maintenance of an adequate dewatering system to remove and dispose of all surface and groundwater entering the excavation, trenches, and other parts of the Work.

1.02 PERMITS AND LICENSES

- A. The Contractor shall be responsible for obtaining all necessary permits as related to dewatering and water discharge and to comply with all stipulations of such permits.
- B. A permit may be required for construction dewatering from the appropriate watershed district and/or the State.

PART 2 PRODUCTS

2.01 NOT USED.

PART 3 EXECUTION

3.01 GENERAL

- A. The Contractor may use any method or combination of methods for dewatering; however, all dewatering methods and equipment which, in the opinion of the Engineer, are ineffective shall be abandoned, improved, replaced or otherwise altered to obtain effective dewatering.
- B. The Contractor shall provide all power, pumps, materials, and equipment necessary, and shall be responsible for disposing of the water pumped from the excavation or pond in a manner that will not interfere with other Work within the area and will not damage public or private property. The discharge of pumped water offsite is prohibited. The Contractor will be held responsible for the condition of any pipe, conduit, ditch, channel or natural watercourse utilized for drainage purposes. All erosion, sediment, or other adverse results of its use shall be repaired at Contractor's expense.

3.02 WATER QUALITY CONTROL

- A. All points of concentrated dewatering discharge shall be visually inspected daily by the Contractor to determine that no eroded materials from the Site are being deposited in any natural drainage ways or surface waters.

END OF SECTION 31 23 19

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SECTION 31 41 00
SHORING

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:

1. Work related to sheeting, shoring, bracing, and excavation support systems needed to accomplish construction of buildings, tanks, facilities, utilities, and piping.

B. Related sections include, but are not limited to:

1. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to work of this section.
2. Division 1 – General Requirement Specification Sections
3. Division 31 – Earthwork Specification Sections.

1.02 SUBMITTALS

A. Shop Drawings and Product Data: Submit, in accordance with Section 01 33 00. In general, include drawings and supporting calculations for shoring for Engineer review and approval.

B. Submittals shall include:

1. Excavation support plan.
2. Movement monitoring plan.
3. Trench excavation plan.
4. Movement measurement and data and reduced results indicating movement trends.
5. Documentation that shoring plan or system has been designed by a registered Professional Engineer if required.

C. Design calculations of bracing and shoring showing member stresses and connections due to imposed loads. Calculations shall be sealed by a qualified professional engineer.

1.03 QUALITY ASSURANCE

A. An OSHA approved competent person shall review the soil classification presented in the Geotechnical Report in the field. Excavations shall comply with the requirements of OSHA 29 CFR, Part 2926, Subpart P, "Excavations and Trenches." Excavation safety is the responsibility of the Contractor. All excavations greater than 20-feet in depth shall be designed by a registered Professional Engineer.

B. Sheeting, shoring, and bracing shall conform to safety requirements of federal, state, and local agencies.

- C. Sheeting, shoring, and bracing shall not affect structural integrity of existing structures, utilities, or Work, and shall allow for sufficient clearances necessary to install associated appurtenances adjacent to new Work.
- D. Sheeting, shoring, and bracing shall not penetrate walls or slabs of new Work unless approved by the Engineer.
- E. Provide surveys to monitor movements of critical facilities.

1.04 REGULATORY REQUIREMENTS

- A. Work outlined in this Section shall conform to OSHA regulations and all applicable codes and regulations for worker safety.

PART 2 PRODUCTS

2.01 SHEETING, SHORING, AND BRACING

- A. Type, design, detail, and installation of sheeting, shoring, and bracing shall be determined by and be the sole responsibility of the contractor.

PART 3 EXECUTION

3.01 GENERAL

- A. Design, provide, and maintain shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work. Shoring, sheeting, and bracing shall also be provided as necessary to protect workers and the public.
- B. Sheeting, shoring, and bracing shall be installed to prevent solids from entering excavation below or through sheeting.
- C. Open cut excavations are to be evaluated by a registered Engineer and protected against surface water intrusion.

3.02 EXCAVATION SUPPORT PLAN

- A. Prepare an excavation support plan addressing the following topics:
 - 1. Select and install shoring system such that no adverse impact occurs on existing structures, utilities, or facilities.
 - 2. Details of shoring, bracing, sloping, or other provisions for worker protection from hazards of caving ground.
 - 3. Design assumptions and calculations.
 - 4. Methods and sequencing of installing excavation support.
 - 5. Proposed locations of stockpiled excavated material.
 - 6. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.
 - 7. Anticipated difficulties and proposed resolutions.

3.03 MOVEMENT MONITORING PLAN

- A. Prepare movement monitoring plan addressing following topics:
 - 1. Survey control.
 - 2. Location of monitoring points.
 - 3. Plots of data trends.
 - 4. Interval between surveys.
 - a. Interval shall not be less than once per week during performance of work until the permanent structure is complete to the ground level and shall continue weekly for a period of four (4) weeks after completion of the work (or longer if movement persists).
 - 5. Remedial action and engineer notification plan should movement of existing structures occur during performance of the Work.

3.04 REMOVAL OF EXCAVATION SUPPORT

- A. Remove excavation support in a manner that will maintain support as excavation is backfilled.
- B. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed Work, or adjacent property.
- C. Remove excavation support in a manner that does not leave voids in the backfill.

3.05 TRENCHES

- A. Provide trench excavations exceeding four (4) feet in depth with adequate safety systems.
- B. For trench excavation exceeding five (5) feet in depth, provide adequate safety systems meeting requirements of applicable state and local construction safety orders, and federal requirements.

END OF SECTION 31 41 00

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SECTION 32 11 23
AGGREGATE BASE COURSES

PART 1 **GENERAL**

1.01 SUMMARY

- A. Section includes general requirements and procedures for furnishing and installing base and pavement courses, including:
 - 1. Subbase Course.
 - 2. Aggregate Base Course.
- B. Related Sections include, but are not limited to:
 - 1. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to work of this section.
 - 2. Division 1 – General Requirement Specification Sections.
 - 3. Division 31 – Earthwork Specification Sections.
 - 4. Division 32 – Exterior Improvements.

1.02 REFERENCES

- A. A. Reference Standards include, but are not limited to:
 - 1. ASTM D698 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12-inch Drop.
 - 2. ASTM D2167 – Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - 3. ASTM D2922 – Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 4. ASTM D3017 – Test Methods for Moisture Content of Soil and Soil-Aggregate in place by Nuclear Methods (Shallow Depth).
 - 5. Utah Department of Transportation Standard Specifications for Road and Bridge Construction - Latest Edition.
 - 6. American Public Works Association (APWA) Utah Chapter Manual of Standard Specifications - Latest Edition.
 - 7. Kearns Improvement District Design Standards & Construction Specifications - Latest Edition.

1.03 SUBMITTALS

- A. Section 01 33 00 – Submittals: Procedures for Submittals.
 - 1. Subbase Course
 - a. Provide appropriate material date source testing for each granular material. Include name location of source, date of testing, and sample gradations. Tests shall not be more than 180 calendar days before date of submittal.
 - 2. Aggregate Base Course
 - a. Submit gradation report on sample of aggregate base to be used.

1.04 SEQUENCING AND SCHEDULING

- A. Construct aggregate base only after all of the following have been completed:
 - 1. Subgrade has been corrected for instability problems and successfully passed a rolling test performed by the Contractor and witnessed by the Engineer.
 - 2. Subgrade has been checked for conformance to line and string tolerances (stringline).
- B. Aggregate base to be completed and approved by Engineer prior to placement of bituminous surfaces.

1.05 QUALITY ASSURANCE

- A. Contractor shall establish and maintain the required lines and grades, including crown and cross-slope, for each course during work.
- B. In-place finished thickness will not be acceptable if exceeding following allowable variation from thickness specified herein:
 - 1. Aggregate Base Course: Plus or minus one-half inch.

PART 2 PRODUCTS

2.01 SUBBASE COURSE

- A. Subbase shall be Type S1 material as specified in Section 31 05 13.

PART 3 EXECUTION

3.01 AGGREGATE BASE COURSE

- A. Preparation:
 - 1. Verify subsoil has been inspected; gradients and elevations are correct.
 - 2. Prepare the sub-base course.
 - 3. Verify subsoil is compacted to specified density and that subgrade test results have been submitted prior to placing aggregate course.
 - 4. Subgrade to be completed and approved by Engineer prior to installation of the aggregate base course.
 - 5. Verify subgrade is dry.
- B. Construction Requirements:
 - 1. Place aggregate in maximum 6-inch layers and compact to 96% of maximum dry density as determined in accordance with ASTM D1557 - Modified Proctor. Moisture content at time of compaction should be near optimum moisture (+/-2%).
 - 2. Level and contour surfaces to elevations and gradients indicated.
 - 3. Install aggregate base in accordance with Detail Drawings.
 - 4. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

5. Use mechanical tamping equipment in areas inaccessible to compaction equipment.
- C. Field Quality Control:
1. The Contractor shall have an independent testing laboratory sample the aggregate base materials, determine the moisture/density relationships and gradation, and perform field moisture/density tests at locations determined by Engineer.
 2. If, during progress of Work, tests indicate that compacted materials do not meet specified requirements, remove defective Work, replace, and retest. Contractor shall bear all costs associated with repair and retesting of defective Work.

3.02 TOLERANCES

- A. Finished Grade:
1. Line and Grade Tolerance: The final aggregate base surface will be checked for conformance to specified tolerances by the “stringline” method prior to approval to pave the surface. Grade shall be ± 0.03 feet of grade.

END OF SECTION 32 11 23

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SECTION 32 12 16
ASPHALT PAVING

PART 1 **GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Bituminous Pavement.

B. Related Work:

1. The General Conditions, Supplementary Conditions, and General Requirements apply to work of this section.
2. Division 1 – General Requirements Specification Sections.
3. Division 31 – Earthwork Specification Sections.

1.02 REFERENCES

A. Reference Standards include:

1. Utah Department of Transportation Standard Specification for Road and Bridge Construction - Latest Edition.
2. American Public Works Association (APWA) Utah Chapter Manual of Standard Specifications - Latest Edition.
3. ASTM C131 – Resistance to Degradation of Small-Sized Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
4. ASTM C136 – Sieve Analysis of Fine and Coarse Aggregate.
5. ASTM C142 – Clay Lumps and Friable Particles in Aggregates.
6. ASTM D1140 – Amount of Material Finer than No. 200 (0.075 mm) Sieve in Aggregate.
7. ASTM D2041 – Theoretical Maximum Specific Gravity and Density of Bituminous Mixtures.
8. ASTM D2950 – Test for Density of Bituminous Concrete in Place by Nuclear Methods.
9. ASTM D5361 – Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing.
10. ASTM D6926, D6927 – Marshall Apparatus.
11. ASTM D6307 – Asphalt Content of Hot Mix Asphalt by Ignition Method.
12. ASTM D6373 – Standard Specification for Performance Graded Asphalt Binder.
13. TAI – (The Asphalt Institute) – MS-2 Mix Design Methods for Asphalt Concrete and Other Hot Mix Types.
14. TAI – (The Asphalt Institute) – MS-3 Asphalt Plant Manual.
15. American Public Works Association (APWA) Utah Chapter Manual of Standard Specifications - Latest Edition

1.03 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 – Submittals: Procedures for submittals.

- B. Product Data: Furnish data on aggregates, asphalt cement, bituminous mixtures, and other materials required for the mix in accordance with Section 01 33 00 and 01 45 00 at least 7 days prior to beginning paving operations.
 - C. Asphalt Mix Formula.
- 1.04 REFER TO UTAH APWA SPECIFICATION SECTION 32 12 05 - BITUMINOUS CONCRETE, PART 1 FOR FUTURE REQUIREMENTS.
- 1.05 SEQUENCING AND SCHEDULING
- A. Construct aggregate base only after all of the following have been completed:
 - 1. Subgrade has been corrected for instability problems and successfully passed a rolling test performed by the Contractor and witnessed by the Engineer.
 - 2. Subgrade has been checked for conformance to line and string tolerances (stringline).
 - B. Aggregate base to be completed and approved by Engineer prior to placement of bituminous surfaces.

PART 2 PRODUCTS

2.01 GENERAL

- A. Asphalt Cement: Asphalt Cement shall be produced in accordance with Utah APWA Specification Section 32 12 05 - Bituminous Concrete Pavement.
 - 1. ASTM 6373 (AASHTO M320) Asphalt Binder have a PG grading of:
 - a. PG64-22.
 - 2. DM-1/2 is the aggregate grade. 50 blow is the compaction level at Marshall mix design.
- B. Asphalt Paving (Bituminous) Mixture (Wear Course) shall have the following properties:
 - 1. The Engineering shall approve the job mix formula submitted by the Contractor. Once the job mix formula is established, all mixtures furnished for the Project shall conform within the following maximum permissible variation:
 - a. Aggregate passing 3/4" and larger sieves..... + or - 7.0%
 - b. Aggregate passing 1/2" and larger sieves..... + or - 7.0%
 - c. Aggregate passing 3/8" and larger sieves..... + or - 7.0%
 - d. Aggregate passing No. 4 and larger sieves + or - 6.0%
 - e. Aggregate passing No. 10 and larger sieves ... + or - 6.0%
 - f. Aggregate passing No. 40 and larger sieves ... + or - 5.0%
 - g. Aggregate passing No. 200 and larger sieves .. + or - 2.0%
 - h. Asphalt..... + or - 0.4%
 - i. Temperature of mixture + or - 20° F
 - 2. The asphalt mixture shall have the following test properties:
 - a. Marshall Stability 1200 lbs. (minimum)

- b. Marshall Flow (units of 0.01 in.)..... 8 to 18
 - c. Air Voids3 to 5 percent
 - 3. Adjustment of the job-mix wear course formula may only be made with written approval of the Engineer.
- C. Tack Coat:
 - 1. SS1H and CSS1H Emulsion meeting the appropriate requirements of ASTM for the specific grade of emulsion. Non-tracking tack products may also be used as approved by the Engineer.
 - 2. Water should be clean and free of impurities, either in solution or colloidal suspension. The presence of ions, both positive and negative, must be carefully monitored.
 - 3. Storage and handling of the emulsion should be performed in accordance with MS-19.
 - 4. All conventional asphalt emulsions shall be diluted with water at a 50:50 ration. Polymer modified and non-tracking emulsions shall not be diluted. Dilution of the emulsion product should be performed at the emulsion terminal or in a tank at the asphalt plant. Emulsion should not be diluted in the distributor at the project site.
 - 5. Never allow asphalt emulsion to freeze.
 - 6. Use pumps with proper clearances for handling to avoid binding and seizing. Avoid repeated pump cycling or frequent pumping.
 - 7. DO NOT mix different classes, grades, or types of emulsified asphalt in storage tanks, transports, or distributors. Make sure tanks are totally clean before changing to another class, grade, or type.
 - 8. Always pump from bottom of tank.
 - 9. Never overheat asphalt emulsion.

PART 3 EXECUTION

3.01 REFER TO APWA SPECIFICATION SECTION 32 12 05 - BITUMINOUS CONCRETE, PART 3 FOR FURTHER REQUIREMENTS

3.02 EXAMINATION

- A. Verify that compacted subgrade is dry, stable, compacted to specified density, at proper temperature, and to proper elevations and grade slopes. Do not begin asphalt-paving construction without Engineer's authorization.
- B. Each course shall be compacted and hardened to such a degree that it will not be displaced or otherwise damaged before another course may be placed thereon.

3.03 PREPARATION

- A. Notify Engineer and Owner at least 72 hours in advance of temporary disruptions of traffic along route of construction.
- B. Saw cut and tack all joints between new and existing pavement.

- C. For asphalt overlay sections, mill a one (1) foot strip along all edges of the overlay area.
- D. The Contractor shall review the proposed paving sequence with the Engineer prior to placement of bituminous course.
- E. All surfaces shall be checked and approved by the Engineer prior to paving.
- F. Existing courses must be dry prior to and during placement of any bituminous pavements.
- G. Wearing course shall not be placed when the air temperature in the shade and away from artificial heat, is 50°F or less, unless otherwise approved by the Engineer.
- H. Pavement shall not be installed on frozen or thawing ground.

3.04 TACK COAT

- A. Always maintain proper distributor spray bar height and spray nozzle angle for proper coverage.
- B. Always maintain proper distributor speed.
- C. Always sweep and clean surfaces to be tack coated.
- D. Never apply more tack coating than can be covered by the same day's operation.
- E. Never over-spread tack coating. If "fat spots" develop, spread out excess oil by pneumatic tire rolling before placing pavement.
- F. Always allow enough time for tack coat to "break" before placing pavement.
- G. Apply bituminous tack coat to existing bituminous pavement and to the surface of each lift or course constructed, other than the final course. Apply in a uniform rate with no missed areas permitted. Application rates shall be approved by the Engineer prior to commencing Work.
- H. The bituminous tack coat shall be applied at a uniform rate of not less than:
 - 1. 0.10 gallons per square yard, for undiluted asphalt emulsion (as supplied from the emulsion terminal); application rate shall be adjusted if necessary to attain bond between courses.
- I. Apply immediately prior to the placement of the next bituminous course or lift. Do not allow public traffic on tack coated areas. The tack coat shall be applied in a manner that offers the least inconvenience to traveling public.
- J. Apply the tack coat on the same day as the proposed surfacing is to be performed. Where emulsified asphalt is specified, dilute one part of water to one part of emulsion and apply the mixture at two times the undiluted rate of application. Allow water to evaporate completely before beginning paving operations. At request of Contractor, Engineer may approve a change in the

dilution ratio of the water-emulsion mixture. Sampling and testing of the emulsion product will be performed at the discretion of the Engineer.

3.05 ASPHALT PAVEMENT CONSTRUCTION

- A. All mixtures shall be spread and finished with a self-propelled, bituminous paver, to the required section, leaving the mixture uniformly dense, smooth, and free from irregularities.
- B. The speed of the bituminous paver shall be controlled to place the mixture uniformly and continuously without tearing or gouging. The speed shall not exceed the Manufacturer's recommendation and shall be coordinated with the output of the plant to provide for a smooth, continuous operation, minimizing starting and stopping.
- C. Perform test strip compaction in field under observation of Engineer to determine the percentage of the asphalt mixture's maximum density achievable. If, in the Engineer's opinion, Contractor is unable to achieve the specified density corresponding with 95 percent of the maximum Marshall density (ASTM D1559), Contractor shall achieve an asphalt compaction equaling or exceeding that obtained in the test strip.
- D. Compact pavement by rolling to specified density as follows:
 - 1. Breakdown rolling shall consist of one or more complete coverages with a rubber tired roller.
 - 2. Breakdown rolling shall be followed by intermediate rolling with either a rubber tired roller or a vibratory steel roller and shall be continued until the surface is tightly bound and shows no displacement under the roller.
 - 3. Intermediate rolling shall be completed before the mat temperature falls below 185° F.
 - 4. Final rolling shall be performed with a steel roller and shall continue until roller marks are eliminated. Contractor may be required to modify rolling sequence to best suit the construction conditions.
 - 5. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
 - 6. Compaction shall be a minimum of 93% of the daily theoretical maximum density (ASTM D-2041).
- E. Uniformly blend pavement surface into elevations at curbs, valve box castings, and other critical points of contact. Place pavement so that the pavement is ¼" higher than the edge of the structure after the pavement has been compacted.
- F. Do not allow drainage to be impeded or casting covers to become difficult to remove.
- G. All transverse and longitudinal joints, high or low areas, and surface irregularities, shall be leveled, filled, or raked prior to compaction. Any loose material dropped on previously compacted lanes shall be removed immediately.

- H. Ensure joints made during paving operations are straight, clean, vertical, and free of broken or loose material. Joints shall be tacked and constructed with adequate bond on abutting surfaces. Vertical construction joints in successive courses shall be placed so that joints do not fall on the same vertical plane.
- I. Rolling shall begin at the edges and proceed parallel to the road centerline, each trip overlapping the previous roller pass. On paving an echelon or abutting a previously placed lane, the longitudinal joint should be rolled first followed by the regular rolling procedure. Rolling shall begin at the low elevation and progress to the high elevation by overlapping of longitudinal passes, paralleling the centerline. Displacement resulting from reversing the direction of a roller or from other causes shall be corrected immediately.
- J. The sequence of rolling operations and the selection of type and number of rollers shall be commensurate with production, and shall be adequate to obtain the specified density before the mat temperature falls below 185° F.
- K. Install all bituminous pavement 3-inches and greater in thickness in a minimum of two lifts. Maximum thickness of a base course lift shall be 3-inches.
- L. Ensure surface of completed asphalt pavement is true to lines, profiles, and elevations indicated and matches existing grade.
- M. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.
- N. The surfaces of previously placed layers shall be swept and a tack coat applied before spreading the next layer.
- O. The overall thickness shown on the Drawings shall be the minimum finished, in-place, compacted thickness of bituminous pavement.
- P. Protect newly paved surfaces from traffic and mechanical injury until surface has cooled to 140°F.
- Q. Any low or high defective areas shall be corrected immediately. Corrective Work shall include patching, cutting out the surface and replacing with fresh, hot bituminous mixture, or by milling the surface.
- R. Clean up paving area.
- S. Ensure manhole covers are clean of all asphalt material and tack coat and returned to the condition they were prior to asphalt paving activities.

3.06 FIELD QUALITY CONTROL

- A. Section 01 45 00 – Quality Control: Field inspection and testing.
- B. Perform field and laboratory testing by an independent testing laboratory appointed and paid for by the Contractor.

- C. Determine maximum density in accordance with ASTM D2041, and compact each course in the field to a density not less than 92 percent of the Maximum Density attained by the theoretical maximum density method.
- D. Perform field density testing in accordance with ASTM D2950; minimum frequency of one test per 2,000 square feet per lift, or once per day, whichever is more frequent. Ensure that the density gauge is properly calibrated and correlated to core density tests for the mix being used.
- E. Notify testing laboratory to perform density tests when testing is to be performed during construction. Do not proceed with additional Work until results have been verified.
- F. If, during progress of Work, tests indicate that compacted materials do not meet specified requirements, remove defective Work, replace, and retest. Contractor to bare all costs associated with defective pavement Work.
- G. Perform gradation analysis of aggregate once for each 500 tons of mix produced, as construction progresses. Test base course and wear course for oil content and air voids to differentiate different mix designs.

3.07 TOLERANCES

- A. Flatness: Maximum variation of 1/4 inch measured with 10-foot straight edge.
- B. Scheduled Compacted Thickness: Within 1/4 inch of specified thickness.
- C. Variation from true elevation: Within 1/4 inch.
- D. Variation from horizontal location: Within 1/4 inch.
- E. Asphalt cement content within 0.24% of approved mix design as determined by daily cutoff report.

3.08 SCHEDULE

- A. New Asphalt: Surface course shall be 3-inches over 8-inches of compacted road base.
- B. Replacement Asphalt: 3-inches or match existing, whichever is greater, over 8-inches of compacted road base.

END OF SECTION 32 12 16

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SECTION 32 97 00
RESTORATION OF DISTURBED AREAS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Restoration of all areas disturbed during construction.
 - 2. Restoration of all items not specifically identified for restoration, but damaged through construction.
- B. Related Sections include, but are not limited to:
 - 1. Division 31 - Earthwork.
 - 2. Division 32 - Exterior Improvements.
 - 3. Division 33 - Utilities.
- C. All disturbed areas shall be returned to the original grade on the Contract Drawings after completion of construction. All disturbed areas shall be revegetated except road pavement and shoulders, riprap and any specific cut slopes as defined in the Contract Documents. Disturbed areas shall be reclaimed to match and blend with characteristic landforms. When feasible, these areas shall be re-contoured, and slopes rounded along access roads and wetland structures to blend with surrounding natural contours.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Material Sections include:
 - 1. Topsoil and Subsoil: Per Section 31 05 13.

PART 3 EXECUTION

3.01 EXECUTION

- A. Observe all surface features requiring protection, removal and replacement, and/or restoration prior to construction.
- B. The Contractor shall be responsible for the preservation of all public and private property and shall protect carefully from disturbance or damage all land monuments and property marks until the Engineer has witnessed or otherwise referenced their location and shall not move them until directed.
- C. The Contractor shall be responsible for all damage or injury to property of any character during the prosecution of the Work, resulting from any act, omission, neglect, or misconduct in this manner or method of executing the Work, or at any

time due to defective Work or materials, and said responsibility will not be released until the Project shall have been completed and accepted.

- D. When any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work, or in consequence of the non-execution thereof by the Contractor, he shall restore, at his own expense, such property to the condition similar or equal to that existing before such damage or injury was done by repairing, rebuilding, or otherwise restoring as may be directed or he shall make good such damage or injury in an acceptable manner.

3.02 RESTORATION

- A. Restore all areas disturbed by construction to a condition equal to or better than existed prior to construction.
- B. Replace, restore, repair, or otherwise make good any damage done to any tree, bush, or shrub that is not specifically designated for removal.
- C. Restore items such as culverts, road signs, power poles, sodding, fences, driveways, mailboxes, and like, whether or not specifically identified on the drawings, to a condition equal to or better than existed before construction.
- D. Replace or repair all pavement removed or damaged during construction with equal or better materials. Replace or repair to match existing conditions.
- E. Stabilize subgrade sufficiently to prevent mixing of granular material with subgrade prior to application of base material.
- F. All damage to streets, driveways, berms, etc. due to the Contractor's construction techniques and equipment shall be repaired at the Contractor's expense prior to final payment.
- G. Remove all excess dirt, concrete, and other debris from project site immediately upon completion of Work. Contractor shall be required to clean site to the condition prior to the start of construction before final payment will be made.

END OF SECTION 32 97 00

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SECTION 33 11 14
DUCTILE IRON PIPE (AWWA C151, MODIFIED)

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall furnish and install ductile iron pipe and all appurtenant Work, complete in place, all in accordance with the requirements of the Contract Documents.

1.2 REFERENCE STANDARDS

A. Commercial Standards:

ANSI/AWWA C104/A21.4	Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water
ANSI/AWWA C105/A21.5	Polyethylene Encasement for Ductile Iron Piping and Fittings for Water
ANSI/AWWA C110/A21.10	Ductile Iron and Gray Iron Fittings, 3-in. through 48-in. for Water and Other Liquids
ANSI/AWWA C111/A21.11	Rubber-Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings
ANSI/AWWA C115/A21.15	Flanged Ductile Iron and Gray-Iron Pipe with Threaded Flanges
ANSI/AWWA C150/A21.50	Thickness Design of Ductile Iron Pipe
ANSI/AWWA C151/A21.51	Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids
ANSI/AWWA C153/A21.53	Ductile Iron Compact Fittings, 3-in. through 12-in. for Water and Other Liquids
AWWA C209	Cold-Applied Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Steel Water Pipelines
AWWA C214	Tape Coating Systems for the Exterior of Steel Water
Pipelines ANSI/AWWA C600	Installation of Ductile Iron Water Mains and their Appurtenances
ASTM C150	Specification for Portland Cement

1.3 CONTRACTOR SUBMITTALS

- A. Shop Drawings: The Contractor shall submit shop drawings of pipe and fittings in accordance with the requirements of Section 01 33 20 – Contractor Submittals, the requirements of the referenced standards and the following supplemental requirements as applicable and specified herein.
 - 1. Marking plan and details of standard pipe section showing dimensions, pipe joints, fitting and special fitting pressure rating and thickness, size, coating and lining data.
 - 2. Pipeline layout drawings showing the location of each pipe section, each special length, closure sections, location and angle of bends, outlets, location of valves, and other special fittings.
- B. Certifications: The Contractor shall furnish a certified affidavit of compliance for all pipe and other products or materials furnished under this Section, as specified in the referenced standards and the following supplemental requirements:
 - 1. Physical and chemical properties.
 - a. Hydrostatic Test Reports
- C. Sample Costs: All expenses incurred in making samples for certification of tests shall be borne by the Contractor.

1.4 QUALITY ASSURANCE

- A. Inspection: All pipe shall be subject to inspection at the place of manufacture, in accordance with the provisions of the referenced standards, as supplemented by the requirements herein. The Contractor shall notify the Engineer in writing of the manufacturing starting date not less than 14 calendar days prior to the start of any phase of the pipe manufacture.
- B. During the manufacture of the pipe, the Engineer shall be given access to all areas where manufacturing is in process and shall be permitted to make all inspections necessary to confirm compliance with the Specifications.
- C. Test: Except as modified herein, all materials used in the manufacture of the pipe shall be tested in accordance with the requirements of the referenced standards as applicable.
- D. The Contractor shall perform said material tests at no additional cost to the Owner. The Engineer shall have the right to witness all testing conducted by the Contractor; provided, that the Contractor's schedule is not delayed for the convenience of the Engineer.
- E. In addition to those tests specifically required, the Engineer may request additional samples of any material including lining and coating samples for testing by the Owner. The additional samples shall be furnished at no additional cost to the Owner

PART 2 - PRODUCTS

2.1 GENERAL

- A. Standards: Mortar-lined and polyethylene-wrapped ductile iron pipe shall conform to ANSI/AWWA C151, C104, and C105, subject to the following supplemental requirements.
The pipe shall be of the diameter and class shown, shall be furnished complete with rubber gaskets as indicated in the Contract Documents, and all flanges, specials and fittings shall be provided as required under the Contract Documents.
- B. Handling and Storage: The pipe shall be handled by devices acceptable to the Engineer, designed and constructed to prevent damage to the pipe coating/exterior. The use of equipment which might injure the pipe coating/exterior will not be permitted. Stockpiled pipe shall be suitably supported and shall be secured to prevent accidental rolling. All other pipe handling equipment and methods shall be acceptable to the Engineer.
- C. Laying Lengths: Maximum pipe laying lengths shall be 20 feet with shorter lengths provided as required by the Drawings.
- D. Finish: The pipe shall have smooth and dense interior surfaces, and shall be free from fractures, excessive interior surface crazing, and roughness.
- E. Closures and Correction Pieces: Closures and correction pieces shall be provided as required so that closures may be made due to different headings in the pipe laying operation and so that correction may be made to adjust the pipe laying to conform to pipe stationing shown on the Drawings. The locations of correction pieces and closure assemblies are shown on the Drawings. Any change in location or number of said items shall be acceptable to the Engineer.
- F. Pipe shall be new and recently manufactured. Refurbished pipe shall not be provided.

2.2 PIPE DESIGN CRITERIA

- A. General: Ductile iron pipe shall be designed in accordance with the requirements of ANSI/AWWA C150 as applicable and as modified in this Section.
- B. Pipe Wall Thickness for Internal Pressure: The pipe shall be designed with a net thickness to withstand the design pressure in accordance with the hoop stress formula.
- C. Pipe Wall Thickness for External Load: The pipe shall also be designed with a net thickness to withstand internal loads using ANSI/AWWA C150 Design Equation (2) with the appropriate bending moment and deflection coefficients for Laying Condition Types 4 and 5 as applicable.
- D. The pipe deflection shall be checked using ANSI/AWWA C150 Design Equation (3) and the coefficients stated above. The allowable deflection shall not exceed 0.0225 times the nominal diameter.

- E. In lieu of ANSI/AWWA C150 Design Equation (4), the earth loads will be computed using the following two equations for trench or embankment loading as applicable:

1. Trench Condition:

- a. $W_d = C_d w B_d^2$,
- b. Where:
- c. W_d = Earth load in pounds per linear foot
- d. C_d = Calculation Coefficient
- e. K_u1 = 0.13
- f. w = 120 lb/ft³
- g. B_d = Trench width at top of pipe, feet

2. Positive Projecting Embankment Condition:

- a. $W_c = C_c w B_c^2$
- b. Where:
- c. W_c = Earth load in pounds per linear foot
- d. C_c = Calculation Coefficient (based on rsdP of 0.25)
- e. K_u1 = 0.13
- f. w = 120 lb/ft³
- g. B_c = Trench width at top of pipe, feet

- F. The above two formulas are based on a depth of cover of 10 feet or greater. For depths of cover of less than 10 feet, HS-20 live load shall be included. For depths of cover of three feet or less, HS-20 live load plus impact shall be included. The determination of live load and impact factors shall be as recommend by AASHTO in "Standard Specifications for Highway Bridges."

- G. If the calculated deflection, Deflx, exceeds 0.0225 times the nominal diameter, the pipe class shall be increased.

- H. Minimum Pipe Wall Thickness: In addition to the requirements of this Section, the minimum wall thickness shall be in accordance with Table 50.5 of ANSI/AWWA C150.

2.3 MATERIALS

- A. Ductile Iron Pipe: Pipe materials shall conform to the requirements of ANSI/AWWA C151.
- B. Cement: Cement for mortar lining shall conform to the requirements of ANSI/AWWA C104, provided that cement for mortar lining shall be Type V. A fly ash or pozzolan shall not be used as a cement replacement.
- C. Polyethylene Sleeve: Material for the polyethylene sleeve shall conform to the requirements of ANSI/AWWA C105.

2.4 SPECIALS AND FITTINGS

- A. Fittings for ductile iron pipe shall conform to the requirements of ANSI/AWWA C153/A21.53 or ANSI/AWWA C110/A21.10 for diameters 3-inch through 48-inch and shall have a minimum pressure rating of 250 psi. Ductile iron fittings larger

than 48-inch shall conform to the above-referenced standard with the necessary modifications for the larger size.

2.5 DESIGN OF PIPE

- A. General: The pipe furnished shall be ductile iron pipe, mortar-lined and polyethylene- wrapped with rubber-gasketed joints as shown.
- B. Manufacturing Requirements: The pipe shall be designed, manufactured, tested, inspected, and marked according to applicable requirements previously stated and, except as hereinafter modified, shall conform to ANSI/AWWA C151.
- C. Pipe Dimensions: The pipe shall be of the diameter and class shown. The minimum wall thickness for each pipe size shall be as specified or shown.
- D. Fitting Dimensions: The fittings shall be of the diameter and class shown.
- E. Joint Design: Ductile iron pipe and fittings shall be furnished with mechanical joints, push- on joints, flanged joints, and restrained joints as required.
 - 1. Mechanical and push-on joints shall conform to ANSI/AWWA C111/A21.11.
 - 2. Restrained Joint:
 - a. Manufactured proprietary joint that mechanically restrains pipe to adjoining pipe without setscrews or devices with shoes or wedges activated by setscrews.
 - b. Rated at minimum working pressure equal to or greater than that of the pipe class.
 - c. The use of devices utilizing setscrews or with shoes or wedges activated by setscrews or bolts shall not be allowed. Except where allowed by governing agencies as temporary thrust restraint.
 - d. The use of field-lock, gripper ring type restraining devices shall be allowed as approved by engineer or owner. Otherwise, they will be limited to only locations where unforeseen field conditions or closure places require the pipe to be field fit, cut, and joined, and as approved by the Engineer. Where field locking, gripper ring type restraining devices are used, the gripper ring shall be installed a minimum of one full pipe length away from the fitting or closure. The installation of gripper ring type restraining devices where used shall be in strict accordance with the manufacturer's installation instructions.
 - e. Field welding of ductile iron pipe and fitting shall not be allowed.
 - 3. Flanged joints shall conform to ANSI/AWWA C115/A21.15.
- F. Joint Clearances: For bell-and-spigot ends with rubber gaskets, the clearance between the bells and spigots shall be such that when combined with the gasket groove configuration and the gasket itself, will provide watertight joints under all operating conditions when properly installed. The Contractor shall require the pipe manufacturer to submit details complete with significant dimensions and tolerances and also to submit performance data indicating that the proposed joint has performed satisfactorily under similar conditions. In the absence of a history of field

performance, the results of a test program shall be submitted.

- G. Coating and Linings Held Back: Shop-applied interior linings and exterior coatings shall be held back from the ends of the pipe as shown, or as otherwise acceptable to the Engineer.

2.5 CEMENT-MORTAR LINING

- A. Cement-Mortar Lining for Shop Application: Except as otherwise provided herein, interior surfaces of all ductile iron pipe, fittings and specials shall be cleaned and lined in the shop with cement-mortar lining applied centrifugally in conformity with ANSI/AWWA C104. During the lining operation and thereafter, the pipe shall be maintained in a round condition by suitable bracing or strutting. The lining machines shall be of a type that has been used successfully for similar work. Every precaution shall be taken to prevent damage to the lining. If lining is damaged or found faulty at the delivery site, the damaged or unsatisfactory portions shall be replaced with lining conforming to these Specifications.
- B. Lining Thickness: The minimum lining thickness shall be as follows:

Nominal Pipe Diameter (in)	Minimum Lining Thickness (in)
3-12	1/8
14-24	3/16
	1/4

- C. Protection of Pipe Lining/Interior: All shop-applied cement mortar lining shall be given a seal coat of asphaltic material in conformance with ANSI/AWWA C104.

2.6 EXTERIOR COATING OF PIPE

- A. Exterior Coating of Buried Piping: The exterior coating shall be an asphaltic coating approximately one mil thick.

2.7 SOURCE QUALITY CONTROL

- A. Factory Tests: In accordance with AWWA C104, C105, C110, C111, C115, C150, C151, C153, and C606.

PART 3 - EXECUTION

3.1 GENERAL

- A. Laying, jointing, testing for defects and for leakage shall be performed in the presence of the Engineer, and shall be subject to approval before acceptance. Material found to have defects will be rejected and the Contractor shall promptly remove such defective materials from the Site.
- B. Installation shall conform to the requirements of AWWA C600, instructions furnished by the pipe manufacturer, and to the supplementary requirements herein.

Wherever the provisions of this Section and the aforementioned requirements are in conflict, the more stringent provision shall apply.

3.2 INSTALLATION OF PIPE

- A. Handling and Storage: All pipe, fittings, etc., shall be carefully handled and protected against damage, impact shocks, and free fall. All pipe handling equipment shall be acceptable to the Engineer. Pipe shall not be placed directly on rough ground but shall be supported in a manner that will protect the pipe coating against injury whenever stored at the trench site or elsewhere. No pipe shall be installed where the lining or coating show defects that may be harmful as determined by the Engineer. Such damaged lining or coating shall be repaired, or a new undamaged pipe shall be furnished and installed.
- B. Damaged Pipe: All pipe damaged prior to Substantial Completion shall be repaired or replaced by the Contractor.
- C. Contractor to Inspect Pipe: The Contractor shall inspect each pipe and fitting prior to installation to insure that there are no damaged portions of the pipe.
- D. Trench excavation and backfill shall conform to the requirements of Section 31 23 00 – Earthwork. Care shall be taken to ensure that pipe zone material is compacted and in full contact with the haunches of the pipe and that the pipe is fully supported.
- E. Clean Pipe: Before placement of pipe in the trench, each pipe or fitting shall be thoroughly cleaned of any foreign substance, which may have collected thereon, and shall be kept clean at all times thereafter. For this purpose, the openings of all pipes and fittings in the trench shall be closed during any interruption to the Work.
 - 1. Remove lumps, blisters, and excess asphaltic type coating from bell and spigot ends of each pipe. Wire brush outside of spigot and inside of bell and wipe clean, dry, and free from oil and grease before pipe is laid.
 - 2. Wipe ends of mechanical joint pipe and fittings and of rubber gasket joint pipe and fittings clean of dirt, grease, and foreign matter.
- F. Pipe Laying: The pipe shall be installed in accordance with ANSI/AWWA C600.
 - 1. Direction of Laying: Lay pipe with bell end facing in direction of laying. For lines on an appreciable slope, face bells upgrade at discretion of Engineer.
 - 2. Mechanical Joint, Push-On Joint, and Restrained Joint Pipe: After first length of pipe is installed in trench, secure pipe in place with approved backfill material tamped under and along sides to prevent movement. Keep ends clear of backfill. After each section is jointed, place backfill as specified to prevent movement. For restrained joint pipe and fittings, after each section is jointed and restraining devices are completely installed, fully extend the completed joint and place backfill as specified to prevent movement before installation of the next section of pipe or fitting.
 - 3. Take precautions necessary to prevent floating of pipe prior to completion of backfill operation.
 - 4. When using movable trench shield, take necessary precautions to prevent pipe joints from pulling apart when moving shield ahead.

5. Do not allow foreign material to enter pipe while it is being placed in trench.
 6. Close and block open end of last laid section of pipe to prevent entry of foreign material or creep of gasketed joints when laying operations are not in progress, at close of day's work, or whenever workers are absent from job.
- G. Joining Push-On Joint Pipe and Mechanical Joint Fittings:
1. Join pipe with push-on joints and mechanical joint fittings in strict accordance with manufacturer's recommendations.
 2. Provide special tools and devices, such as, special jacks, chokers, and similar items required for installation.
 3. Lubricate pipe gaskets using lubricant furnished by pipe manufacturer. No substitutes will be permitted.
 4. Clean ends of fittings of dirt, mud, and foreign matter by washing with water and scrubbing with a wire brush, after which, slip gland and gasket on plain end of pipe. If necessary, lubricate end of pipe to facilitate sliding gasket in place, then guide fitting onto spigot of pipe previously laid.
- H. Founding Pipe: Pipe shall be laid directly on the Pipe Zone material. No blocking will be permitted, and the bedding shall be such that it forms a continuous, solid bearing for the full length of the pipe. Excavations shall be made as needed to facilitate removal of handling devices after the pipe is laid. Bell holes shall be formed at the ends of the pipe to prevent point loading at the bells or couplings. Excavation shall be made as needed outside the normal trench section at field joints to permit adequate access to the joints for field connection operations and for application of coating on field joints.
- I. Unforeseen Obstructions: Where necessary to raise or lower the pipe due to unforeseen obstructions or other causes, the Engineer may change the alignment and/or the grades. Such change shall be made by the deflection of joints, or by the use of additional fittings. However, in no case shall the deflection in the joint exceed the maximum designed deflection recommended by the pipe manufacturer. No joint shall be misfit any amount that will be detrimental to the strength and water tightness of the finished joint.
- J. Except for short runs which may be permitted by the Engineer, pipes shall be laid uphill on grades exceeding 10 percent. Pipe which is laid on a downhill grade shall be blocked and held in place until sufficient support is furnished by the following pipe to prevent movement. All bends shall be properly installed as shown.
- K. Cold Weather Protection: No pipe shall be installed upon a foundation into which frost has penetrated or at any time that there is a danger of the formation of ice or penetration of frost at the bottom of the excavation. No pipe shall be laid unless it can be established that the trench will be backfilled before the formation of ice and frost occurs.
- L. Pipe and Specials Protection: The openings of all pipe and specials shall be protected with suitable bulkheads to prevent unauthorized access by persons, animals, water or any undesirable substance. At all times, means shall be provided to prevent the pipe from floating.

- M. Pipe Cleanup: As pipe laying progresses, the Contractor shall keep the pipe interior free of all debris. The Contractor shall completely clean the interior of the pipe of all sand, dirt, mortar splatter and any other debris following completion of pipe laying, pointing of joints and any necessary interior repairs prior to testing and disinfecting the completed pipeline.
- N. Cutting Pipe: General: Cut pipe for inserting closure pieces in a neat and workmanlike manner without damaging pipe or lining and so as to leave a smooth end, at right angles to axis of pipe.
 - 1. Pipe: Cut pipe with milling type cutter or saw. Do not flame cut.
 - 2. Dressing Cut Ends: Dress cut ends of push-on joint pipe by beveling, as recommended by manufacturer.
- O. Field Welding:
 - 1. Field welding of ductile iron pipe shall not be allowed.
 - 2. Field welding of bars for restrained joint systems will not be allowed. All welding shall be performed in pipe manufacturer's shop.
- P. Field Installed Outlets: Field outlets may be installed with a saddle; however, the maximum nominal diameter of outlet for saddle shall be 2-inch. Opening in pipe shall be machine cut. Flame cut openings shall not be allowed.

3.3 RUBBER GASKETED JOINTS

- A. Rubber Gasketed Joints: Immediately before jointing pipe, the bell end of the pipe shall be thoroughly cleaned, and a clean rubber gasket, lubricated with an approved vegetable-based lubricant, shall be placed in the bell groove. The spigot end of the pipe shall be carefully cleaned and lubricated with a vegetable-based lubricant. The spigot end of the pipe section shall then be inserted into the bell of the previously laid joint and telescoped into its proper position. Tilting of the pipe to insert the spigot into the bell will not be permitted.

3.4 CORROSION PROTECTION

- A. Polyethylene Encasement: Buried ductile iron pipe shall be polyethylene encased in accordance with the requirements of ANSI/AWWA C105/A21.5.
 - 1. Encase pipe, fittings, and valves in accordance with AWWA C105, Method A.
 - 2. Cut polyethylene tube approximately 2 feet longer than pipe length.
 - 3. Slip tube around pipe, centering to provide 1-foot overlap on each adjacent section.
 - 4. Pull encasement to take out slack and wrap snug around pipe.
 - 5. Secure overlap in place and fold at quarter points of pipe length.
 - 6. Wrap and tape encasement snug around fittings and valves.

3.5 INSTALLATION OF PIPE APPURTENANCES

- A. Protection of Appurtenances: Where the joining pipe is tape-coated, buried appurtenances shall be coated with cold-applied tape in accordance with ANSI/AWWA C209, Type II. Where pipe is encased in polyethylene sleeves, buried appurtenances shall also be encased in polyethylene.

- B. Installation of Valves: All valves shall be handled in a manner to prevent any injury or damage to any part of the valve. All joints shall be thoroughly cleaned and prepared prior to installation. The Contractor shall adjust all stem packing and operate each valve prior to installation to insure proper operation.
- C. Valve Installation: All valves shall be installed so that the valve stems are plumb and in the location shown on the Drawings.

3.6 INSTALLATION OF METALLIC LOCATING TAPE

- A. Buried pipelines shall be provided with a metallic locating tape laid along the centerline of the pipe trench at a depth of 18 inches below finished grade OR 12-inches above top of pipe. The Contractor shall furnish manufacturer's literature, completely describing the tape proposed to be furnished. No tape shall be used prior to receipt of written approval of the Engineer.

3.7 FIELD TESTING AND DISINFECTION

- A. Field testing shall conform to the requirements of Section 33 13 00 – Water Pipeline Testing and Disinfection as applicable.

END OF SECTION 33 11 14

SECTION 33 13 00
DISINFECTION OF WATER SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Disinfection of potable water pipelines.
 - 2. Testing and reporting results.
- B. Related Sections include, but are not limited to:
 - 1. Section 01 33 00 – Submittal Procedures.
 - 2. Section 01 45 00 – Quality Control.

1.02 REFERENCES

- A. American Public Works Association (APWA) Utah Chapter Manual of Standard Specifications, latest Edition, Section 33 13 00 - Disinfection.
- B. NSF International (NSF):
 - 1. NSF/ANSI 61, Drinking Water System Components - Health Effects.
 - 2. NSF/ANSI 372, Drinking Water System Components - Lead Content.
- C. Standard Methods for the Examination of Water and Wastewater, as published

by American Public Health Association, American Water Works Association, and the Water Environment Federation.

1.03 SUBMITTALS FOR INFORMATION

A. Informational Submittals:

1. Plan describing and illustrating conformance to appropriate AWWA standards and this Specification.
2. Procedure and plan for cleaning system.
3. Procedures and plans for disinfection and testing.
4. Proposed locations within system where Samples will be taken.
5. Type of disinfecting solution and method of preparation.
6. Method of disposal for highly chlorinated disinfecting water.
7. Independent Testing Agency: Certification that testing agency is qualified to perform chlorine concentration testing, and bacteriological testing in accordance with APWA standards, Kearns Improvement District Standard Specifications, and this Specification Section.
8. Certified Bacteriological Test Results:
 - a. Facility tested is free from coliform bacteria contamination.
 - b. Forward results directly to Owner and Engineer.

1.04 DEFINITIONS

- A. Disinfectant Residual means the concentration of disinfectant in the treated water.

- B. PPM means parts per million.

1.05 QUALITY ASSURANCE

- A. Regulatory Agency Requirements: Comply with Utah Department of Environment Quality requirements.
- B. Perform work in accordance with AWWA C651 for the disinfection of water mains.
- C. Testing Firm: Company specializing in testing potable water systems, approved by the Utah Department of Environment Quality. Contractor shall notify the Jordan Valley Water Conservancy District to come out and collect samples for the bacteriological test. Contractor shall coordinate sampling and testing schedule with the City and the laboratory. Contractor shall pay all testing fees and lab costs.
- D. Submit bacteriologist's signature and authority associated with testing.
- E. The cleaning and disinfection work shall be conducted prior to connection to the existing water lines or to any portion that has been put into service. Unless otherwise approved, hydrostatic testing shall be completed prior to final cleaning and disinfection.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect against damage and contamination.
- B. Maintain caution labels on hazardous materials.
- C. Maintain storage room dry and with temperatures as uniform as possible between 60- and 80-degrees F.
- D. Provide necessary signs, barricades, and notices to prevent any person from accidentally consuming water or disturbing system being treated.

1.07 PROJECT RECORD DOCUMENTS

- A. Disinfection report:
 - 1. Type and form of disinfectant used.
 - 2. Date and time of disinfection.
 - 3. Test locations.
 - 4. Initial and final disinfectant residuals (quantity in treated water) in ppm for each test.
 - 5. Date and time of flushing start and completion.
 - 6. Disinfectant residual after flushing in ppm for each location test.
- B. Bacteriological report:
 - 1. Date issued, project name, and testing laboratory name, address, and telephone number.
 - 2. Time and date of water sample collection.

3. Name of person collecting samples.
4. Test locations.
5. Initial and final disinfectant residuals in ppm for each test location.
6. Coliform bacteria test results for each test.

PART 2 - PRODUCTS

2.01 ACCEPTABLE DISINFECTION CHEMICALS

- A. Components and Materials in Contact with Water for Human Consumption:
 1. Comply with the requirements of the Safe Drinking Water Act and other applicable federal, state, and local requirements. Provide certification by manufacturer or an accredited certification organization recognized by the Authority Having Jurisdiction that components and materials comply with the maximum lead content standard in accordance with NSF/ANSI 61 and NSF/ANSI 372.
 - a. Use or reuse of components and materials without a traceable certification is prohibited.
- B. AWWA B300, Hypochlorite: Shall conform to Federal Specification O-C-114a, Type II, Grade B, or Federal Specification O-C-602b.
- C. AWWA B301, Liquid Chlorine: Shall conform to Federal Specification BB-C-120a.

PART 3 - EXECUTION

3.01 GENERAL

- A. All testing must be carried out with Owner representative present.
- B. Conform to AWWA C651 for pipes and pipelines, except as modified in these specifications.
- C. Contractor's Equipment:
 1. Furnish chemicals and equipment, such as pumps and hoses, to accomplish disinfection.
 2. Water used to fill pipeline may be supplied using a temporary connection to existing distribution system. Provide protection against cross-connections as required by AWWA C651.
- D. Disinfect the following items installed or modified under this Project, intended to hold, transport, or otherwise contact potable water:
 1. Pipelines: Disinfect new pipelines that connect to existing pipelines up to point of connection.
 2. Disinfect surfaces of materials that will contact finished water, both during and following construction, using one of the methods described in AWWA C652 and AWWA C653. Disinfect prior to contact with finished water. Take care to avoid recontamination following disinfection.

- E. Prior to application of disinfectants, clean pipelines of loose and suspended material.
- F. Allow freshwater and disinfectant solution to flow into pipe or vessel at a measured rate so chlorine-water solution is at specified strength. Do not place concentrated liquid commercial disinfectant in pipeline or other facilities to be disinfected before it is filled with water.

3.02 TURBIDITY

- A. Cleaning of equipment and facilities shall include removal of materials that result in a turbidity exceeding limits stated in Article Testing.

3.03 PIPELINES

- A. Cleaning:
 - 1. Before disinfecting, clean foreign matter from pipe in accordance with AWWA C651.
 - 2. If continuous feed method or slug method of disinfection, as described in AWWA C651, are used flush pipelines with potable water until clear of suspended solids and color. Provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent properties.
 - 3. Flush service connections and hydrants. Flush distribution lines prior to flushing hydrants and service connections. Operate valves during flushing process at least twice during each flush.
 - 4. Flush pipe through flushing branches and remove branches after flushing is completed.
 - 5. See Section 33 13 10 for additional information on flushing.
- B. Disinfection Procedure: In accordance with AWWA C651, unless herein modified.

3.04 DISPOSAL OF CHLORINATED WATER

- A. Do not allow flow into a waterway without neutralizing disinfectant residual.
- B. See appendix of AWWA C651 for acceptable neutralization methods.

3.05 BACTERIOLOGICAL TESTING

- A. After disinfection and flushing, test water for bacteriological contamination. Samples for bacteriological analysis shall be collected by the Snake River Water District in sterile bottles obtained from the testing laboratory and submitted for testing.
- B. Samples shall be taken from the hydrants. Duplicate samples shall be collected from each hydrant.
- C. Two or more successive test samples indicating bacteriological satisfactory water shall be obtained before facility is placed into operation.

- D. If contamination is shown to be still present in the water supply, the disinfection procedure shall be repeated.
- E. All testing costs shall be paid by Contractor.

3.06 FIELD QUALITY CONTROL

- A. Field inspection and testing.
- B. Samples for bacteriological analysis shall be collected in sterile bottles.
- C. Two or more successive test samples indicating bacteriological satisfactory water shall be obtained a minimum of 24 hours apart, before any system is placed into operation.

END OF SECTION 33 13 00

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SECTION 33 13 10
PIPELINE PRESSURE AND LEAKAGE TESTING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Field hydrostatic pressure and leakage testing of water mains and associated appurtenances.
- B. Related Sections included, but not limited to:
 - 1. Section 01 33 00 – Submittal Procedures.
 - 2. Section 01 45 00 – Quality Control.
 - 3. Section 33 11 14 - Ductile Iron Pipe and Fittings
 - 4. Section 33 13 00 – Disinfection of Water Systems.

1.02 REFERENCES

- A. American Public Works Association (APWA) Utah Chapter Manual of Standard Specifications, Latest Edition, Section 33 08 00 - Commissioning of Water Utilities.

1.03 SUBMITTALS FOR INFORMATION

- A. Section 01 33 00 – Submittal Procedures.
- B. Testing Schedule and Procedure - A testing schedule and test procedure shall be submitted to the Engineer for review and acceptance not less than 21 days prior to commencement of testing work. The schedule shall indicate the proposed time and sequence of testing of the pipeline. The testing procedure shall establish the limits of the pipeline to be tested, the position of all valves during testing, the location of temporary bulkheads, disposal of test water, and all other methods and procedures to be followed in performing the required testing work.

1.04 QUALITY ASSURANCE AND SPECIAL REQUIREMENTS

- A. All pipelines and appurtenances shall be pressure and leakage tested in accordance with AWWA C600 for Ductile Iron Pipes, AWWA C604 for Steel Pipes, AWWA C605 for PVC Pipes and these specifications.
- B. During testing of the water line, all valves shall be in the open position.
- C. Temporary bulkheads shall be provided during testing so that the test pressures are not applied to existing or new valves and hydrants, or to existing water lines or to any portion that has been put into service of new lines installed under this Contract.

- D. The tests shall be conducted before connections are made to existing water lines or to any portion that has been put into service or new water lines installed under this Contract.
- E. Upon completion of testing, connections made to existing water lines or to any portion that has been put into service of new water lines installed under this Contract shall be visually inspected for leakage after placing the water line into service and before backfilling the connection.

PART 2 PRODUCTS

2.01 TEST EQUIPMENT

- A. All necessary piping connections between the line to be tested and the water source, together with pumping equipment, water meter, pressure gauges, backflow protection, and other equipment, materials, and facilities required to perform the specified tests, shall be provided. All flanges, valves, bulkheads, bracing, blocking, and other sectionalizing devices shall be provided. All temporary sectionalizing devices shall be removed upon completion of testing. Vents shall be provided in test bulkheads where necessary to expel air from the line to be tested.
- B. Test pressures to be applied by means of a force pump sized to provide and maintain the required pressure without interruption during the test.
- C. Water meters and pressure gauges shall be accurately calibrated and shall be subjected to review and acceptance by the Engineer.
- D. Permanent gauge connections shall be installed at each location where test gauges are connected to the pipeline in manholes during performance of required tests. Drilling and tapping of pipe walls will not be permitted. Upon completions of testing work, each gauge connection shall be fitted with a removable plug or cap acceptable to the Engineer.

PART 3 EXECUTION

3.01 GENERAL

- A. All testing must be carried out with Owner representative present.

3.02 PREPARATION

- A. When filling the line with water, care shall be taken to ensure that all air release valves, and other venting devices are properly installed in the open position. Hand-operated vent valves shall not be closed until water flows in an uninterrupted stream from each valve. Care shall be taken to ensure that the rate at which the line is filled with water does not exceed the venting capacity of the installed air vent valves and devices.

- B. Piping shall be adequately blocked, anchored, and supported before the test pressure is applied. Underground piping shall be tested before the joints are covered.

3.03 FLUSHING

- A. Foreign material left in pipelines during installation can result in valve or hydrant seat leakage during pressure tests. Every effort shall be made to keep lines clean during installation. Thorough flushing is required prior to a pressure test; flushing shall be accomplished by partially opening and closing valves several times under expected line pressure, with flow velocities adequate to flush foreign material out of the valves, minimum 2.5 fps.
- B. Remove debris, sediment and other material from installed pipe before testing. Do not discharge or flush sand, gravel, concrete, debris or other foreign material into any existing pipeline system. Flushing with clean water only will be allowed but with minimal flows to eliminate exceeding capacities of receiving systems. Flushing into existing pressurized water systems is NOT ALLOWED. Legally dispose disinfection and flushing water and ensure no damage to the environment.
- C. For Pipelines 24 inches or larger in diameter, acceptable alternatives to flushing are use of high -pressure water jet, sweeping, or scrubbing. Water, sediment, dirt, and foreign material accumulated during this cleaning operation shall be discharged, vacuumed, or otherwise removed from the pipe.
- D. Remove accumulated debris through blowoffs 2 inches and larger or by removing pools and valves from piping.

3.04 ALLOWABLE MAKEUP WATER

- A. Makeup water shall be defined as the quantity of water that must be supplied into a newly laid pipe or any valved section thereof to maintain pressure within 5 psi (34.5 kPa) of the specified test pressure after pipe has been filled with water and the air has been expelled.
- B. Makeup water shall not be measured by a drop in pressure in a test section over a period of time. Measurements of leakage shall not be attempted until all trapped air has been vented and a constant test pressure has been established. After the pressure has stabilized, line leakage shall be measured by means of a suitable water meter installed in the pressure supply piping on the pipeline side of the force pump.
- C. The quantity of allowable makeup water shall not exceed the test allowance specified in AWWA C600 for Ductile Iron Pipes, AWWA C604 for Steel Pipes and AWWA C605 for PVC Pipes.

- D. Whenever the pipeline to be tested contains pipe of different diameters, joint types and material, the allowable makeup water shall be calculated separately for type and corresponding length of line. The resulting allowable makeup water rates shall be added to obtain the total allowable leakage for the entire pipeline.
- E. All joints in piping shall be watertight and free from visible leaks during the hydrostatic field test. Acceptance shall be determined on the basis of the hydro test. If any test of laid pipe requires makeup water greater than that specified, repairs or replacements shall be accomplished and the pipe retested. All visible leaks shall be repairs regardless of the amount of leakage.
- F. If the leakage test indicates a line leakage rate exceeding the allowable, the Contractor shall locate and repair leaking joints and other defective items to the extent required to reduce the line leakage to an acceptable amount.

END OF SECTION 33 13 10

SECTION 40 05 58
PROCESS VALVES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Furnishing and installation of the following, in accordance with the provisions of the Contract Documents.
 - a. Pressure Reducing Valve
 - b. Air Release Valve
 - c. All other process valves are specified in Kearns Improvement District Design Standards & Construction Specifications

B. Reference Standards Include:

1. AWWA C511-17: Reduced-Pressure Principle Backflow Prevention Assembly
2. ANSI B16.5: American National Standard Pipe Flanges and Flanged Fittings.
3. Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry, Inc. Standard Practice 67.

1.02 SUBMITTALS

- A. Shop Drawings and Product Data shall be submitted in accordance with specification Section 01 33 00 and shall include detailed specifications, drawings, and data covering all materials, parts, devices, equipment, and other accessories forming part of equipment for the complete operational system.

1.03 QUALITY ASSURANCE

- A. The equipment and material to be furnished under this Contract shall be in accordance with Section 01 45 00 Quality Controls and Section 01 61 00 Common Product Requirements.

1.04 REGULATORY REQUIREMENTS

- A. All Products that may come into contact with water intended for use in a Public Water System shall meet American National Standards Institute (ANSI)/National Sanitation Foundation (NSF) International Standards 60, 61, 600, and 372, as appropriate.
- B. A Product will be considered as meeting these standards if so certified by NSF, the Underwriters Laboratories, or other organization accredited by ANSI to test and certify each Product.

1.05 WARRANTY REQUIREMENTS

- A. A written warranty shall be provided for the equipment specified in this Section. The warranty shall be for a minimum period identified herein and shall begin from the date of Final Completion, as defined in Section 01 77 00. Such warranty shall cover all defects or failures of materials or workmanship that occur as the result of normal operation and service. No prorated warranty will be accepted.
 - 1. Contractor's Warranty: One (1) Year.
 - 2. Manufacturer's Warranty: Minimum of one (1) year but not less than manufacturer's standard warranty period.

PART 2 PRODUCTS

2.01 GENERAL

- A. Provide valves with manufacturer's name and pressure rating clearly marked on outside of body.
- B. Unless otherwise indicated, use valves suitable for 150 psi minimum working pressure. Valves off a high service pipeline should be suitable to 200 psi minimum working pressure.
- C. Valve materials shall be compatible with the liquid or chemical service for that particular valve and consistent with piping materials. Contractor shall submit valve service to Owner and Engineer for confirmation of chemical compatibility.
- D. Contractor shall verify all valve sizes, quantities, and requirements with the Drawings and Specifications and notify Engineer of any discrepancies.

2.02 VALVE CONNECTIONS

- A. Provide valves suitable to connect to adjoining piping as specified for pipe joints. Use full port size valves, unless otherwise specified.
- B. Thread pipe sizes 1-1/2 inches and smaller unless indicated otherwise.
- C. Flange pipe sizes 2 inches and larger unless indicated otherwise.

2.03 PRESSURE REDUCING VALVE

- A. Approved Manufacturers and Type:
 - 1. Model 90-01 by Cla-Val Company.
 - 2. Approved Equivalent
- B. Process Pipe PRV: The pressure reducing valve shall maintain a constant downstream pressure, regardless of fluctuating demand. The pressure reducing control responds to slight variations in downstream pressure and immediately repositions the main valve to maintain the desired downstream pressure.
- C. Adjustment Range (for downstream pressure setpoint): 2 to 30 psi

- D. Temperature Range: Water to 180 degrees F.
- E. Main Valve Materials:
 - 1. Body and Cover: Ductile Iron; Flanged, 150 Class
 - 2. Disk Retainer & Diaphragm Washer: Cast Iron.
 - 3. Trim (Disc guide, seat, and cover bearing): Bronze.
 - 4. Disc: Buna N Rubber, if applicable.
 - 5. Diaphragm: Nylon reinforced Buna N, if applicable.
 - 6. Main valve shall be packed with leather to insure tight closure and prevent metal-to-metal friction and seating, where applicable.
 - 7. Stem, Nut, and Spring: Stainless Steel.
- F. Pilot System Materials:
 - 1. Pilot Control: Bronze.
 - 2. Trim: Stainless Steel Type 303.
 - 3. Rubber: Buna N Synthetic Rubber.

2.04 AIR RELEASE VALVE

- A. Approved Manufacturers and Type:
 - 1. APCO 145C by DeZURIK, Inc.
 - 2. Approved Equivalent
- B. Orifice size: 3/32"
- C. Process Pipe ARV: When the valve is closed and pressurized, the small air release orifice will open to allow small pockets of air to escape automatically and independently of the large orifice. The large orifice shall also allow large volumes of air to enter during pipeline drainage to break the vacuum.
- D. Valve Materials:
 - 1. Body and Cover: Ductile Iron
 - 2. Float: Stainless Steel
 - 3. Needle and seat: Buna N Rubber, if applicable.
 - 4. Plug: Stainless Steel
 - 5. Leverage frame: Delrin/Cast Iron

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install valves per manufacturer's recommendations.
 - 1. Install valves with stems upright or horizontal, not inverted (does not apply to plug valves).
 - 2. Install valves in the locations shown on Drawings. Verify configuration with Owner and Engineer.
- B. Provide adequate structural support of installed valves as required.

C. Valve tags to be installed so as not to interfere with valve operation.

3.02 STARTING AND ADJUSTING

A. Furnish Owner and Engineer with a written report prepared by equipment supplier certifying that equipment:

1. Has been properly installed.
2. Is in accurate alignment.
3. Is free from an undue stress imposed by connecting piping, anchor bolts, etc.
4. Has been operated through at least two complete open/close cycles.
5. Checked for leakage

END OF SECTION 40 05 58