

## Project Manual

# Clay Center Public Utilities Commission Hospital Water Main Reroute Clay Center, Kansas

### Commissioners

Mike Floersch, Chairman  
Don Button  
Brad Dieckmann

### Superintendent

Bill Callaway

### Assistant Superintendent

Scott Glaves



### Project Engineer

CES GROUP P.A.  
1102 BROADWAY  
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W.O.# 132125  
June 2015



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1. Kansas Department of Health and Environment Procedures for Pressure and Leakage Testing of Water Mains.
2. Kansas Department of Health and Environment Procedures for the Disinfection of Water Mains.



SECTION 00100

**INVITATION TO BID**

ENGINEER

CES Group P.A.  
1102 Broadway  
Marysville, KS 66508  
Telephone (785) 562-5148

OWNER

Clay Center Public Utilities Commission  
Hospital Water Main Reroute

Date: August 23, 2016

You are invited to bid on a single general contract for construction described in general as follows:

- Install new water main along Anthony Street from 5<sup>th</sup> to 7<sup>th</sup> and along 7<sup>th</sup> Street from Anthony to Liberty. Main items of work include Directional Drill 8" Water Main, 1065 LF; Directional Drill 10" Water Main, 340 LF; Shutoff Valves, Connect to Existing System.

OWNER will receive bids until 2:00 P.M., September 22, 2016, at Clay Center Public Utilities Commission, 427 Court St (PO Box 37), Clay Center, Kansas 67432. Bids received after this time may not be accepted. A public bid opening will not be held. OWNER will review bids and notify bidders of results when the project has been awarded.

Proposed Bidding Documents may be examined at:

Clay Center Public Utilities Commission, 427 Court St, Clay Center, Kansas 67432  
CES Group P.A., 1102 Broadway, Marysville, KS 66508  
Kansas Construction News Report, 230 Laura, Suite 101, Wichita, KS 67211  
Associated General Contractors of Kansas, 200 SW 33<sup>rd</sup>, Topeka, KS 66611

Copies of the proposed Bidding Documents may be obtained from the ENGINEER upon receipt of a non-refundable deposit in the amount of \$30 for each set. Electronic documents are available at no cost, upon request to the ENGINEER. Please provide email and fax if available. Addendums and plan holder lists will be distributed through fax and email for those that request complete Bidding Documents.

Bid Security will be required in accordance with the Instructions to Bidders.

Bidder qualifications may be required in accordance with Instructions to Bidders.

Contract time will be set in accordance with the Instructions to Bidders and Agreement.

OWNER reserves the right to reject any and all Bids and to waive irregularities in bidding.

Any questions regarding the Bidding Documents should be directed to ENGINEER.

CLAY CENTER PUBLIC UTILITIES COMMISSION  
Bill Callaway, Superintendent

## SECTION 00200

### SUGGESTED INSTRUCTIONS TO BIDDERS

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##### **PART 1. DEFINED TERMS**

- 1.1 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. Issuing Office – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

##### **PART 2. COPIES OF BIDDING DOCUMENTS**

- 2.1 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid may be obtained from the Issuing Office. The deposit will be refunded or not refunded as stated in the Invitation to Bid.
- 2.2 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

##### **PART 3. QUALIFICATIONS OF BIDDERS**

- 3.1 To demonstrate Bidder's qualifications to perform the Work, within five days of Owner's request, Bidder shall submit written evidence such as financial data; previous experience, present commitments, and such other data as may be called for below.
- A. Number of year's company has been in business under present management and name.
- B. Experience record for at least five years previous.
- C. Outstanding lawsuits, the nature of the suits, and identification of the parties of the suit.
- D. Claims or lawsuits filed against the Company during the past five years, and the disposition of the lawsuits.
- E. Specific experience related to this project.
- F. Identification of the key project staff that will be assigned to the project, and their experience records.
- G. List of references from previous similar projects.

- H. Other work in progress.
- 3.2 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

**PART 4. EXAMINATION OF BIDDING DOCUMENTS AND SITE**

4.1 Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

1. Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site.
2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. Copies of reports and drawings referenced in Paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of the General Conditions has been identified and established in Paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.2 Underground Facilities

A. Information and data shown or indicated in the Bidding Documents with respect to existing 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, including Owner, or others.

4.3 Hazardous Environmental Condition

A. The Supplementary Conditions identify any reports and drawings known to Owner relating to a Hazardous Environmental Condition identified at the Site.

B. Copies of reports and drawings referenced in Paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.06 of the General Conditions has been identified and established in Paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.4 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 4.02, 4.03, and

4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 4.06 of the General Conditions.

- A. On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.
- B. Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of contract documents (other than portions thereof related to price) for such other work.
- C. Paragraph 6.13.C of the General Conditions indicates that if an Owner safety program exists, it will be noted in the Supplementary Conditions.

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

- A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in Paragraph 4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Paragraph 4.06 of the Supplementary Conditions as containing reliable "technical data";
- E. consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques,



sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs;

- F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
  - G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
  - H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
  - I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.6 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

## **PART 5. SITE AND OTHER AREAS**

- 5.1 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

## **PART 6. INTERPRETATIONS AND ADDENDA**

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

## **PART 7. BID SECURITY**

- 7.1 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price and in the form of a certified check, bank money order, or a Bid bond (on the form attached) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.
- 7.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 91 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 7.3 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

## **PART 8. CONTRACT TIMES**

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

## **PART 9. LIQUIDATED DAMAGES**

- 9.1 Provisions for liquidated damages, if any, are set forth in the Agreement.

## **PART 10. SUBSTITUTE AND "OR-EQUAL" ITEMS**

- 10.1 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement.

## **PART 11. SUBCONTRACTORS, SUPPLIERS AND OTHERS**

- 11.1 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if

requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit 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 cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 11.2 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

## **PART 12. PREPARATION OF BID**

- 12.1 The Bid Form is included with the Bidding Documents. Additional copies may be obtained from Engineer.
- 12.2 All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein. In the case of optional alternatives the words "No Bid," "No Change," or "Not Applicable" may be entered.
- 12.3 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.
- 12.4 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
- 12.5 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 12.6 A Bid by an individual shall show the Bidder's name and official address.
- 12.7 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 12.8 All names shall be printed in ink below the signatures.

- 12.9 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 12.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

### **PART 13. BASIS OF BID; COMPARISON OF BIDS**

#### **13.1 *Unit Price***

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

### **PART 14. SUBMITTAL OF BID**

- 14.1 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the following documents:
- 14.2 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Bill Callaway, Clay Center Public Utilities Commission, 427 Court St., PO Box 37, Clay Center, Kansas 67432.

**PART 15. MODIFICATION AND WITHDRAWAL OF BID**

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

**PART 16. OPENING OF BIDS**

- 16.1 A public bid opening will not be held. OWNER will open and evaluate bids. A bid tabulation will be prepared for all participating bidders.

**PART 17. BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

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

**PART 18. EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 18.1 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 18.2 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 18.3 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 18.4 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 18.5 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors,

Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.

- 18.6 If the Contract is to be awarded, Owner will award the Contract to the Bidder whose Bid is in the best interests of the Project.

#### **PART 19. CONTRACT SECURITY AND INSURANCE**

- 19.1 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

#### **PART 20. SIGNING OF AGREEMENT**

- 20.1 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

#### **PART 21. SALES AND USE TAXES**

- 21.1 Owner is exempt from Kansas State Sales and use taxes on materials and equipment to be incorporated in the Work. (Owner will provide an exemption number). Said taxes shall not be included in the Bid.

#### **PART 22. RETAINAGE**

- 22.1 Provisions concerning Contractor's rights to deposit securities in lieu of retainage are set forth in the Agreement.

#### **PART 23. HISTORICAL OR ARCHEOLOGICAL**

- 23.1 If during the course of construction evidence of deposits of historical or archeological interest is found, the Contractor shall cease operations affecting the find and shall notify the Owner who shall notify the Kansas Department of Health and Environment and the Executive Director, Kansas State Historical Society, 120 W. 10<sup>th</sup>, Topeka, Kansas 66612. No further disturbance of the deposits shall ensue until the Contractor has been notified by the Owner. Compensation to the Contractor, if any, for lost time or changes in construction to avoid the find, shall be determined in accordance with changed conditions or change order provisions of the specifications.

SECTION 00300

**BID FORM**

HOSPITAL WATER MAIN REROUTE

CLAY CENTER PUBLIC UTILITIES COMMISSION

W.O. # 162535

This Bid is submitted to:

*Clay Center Public Utilities Commission*

1. 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.
2. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.
3. In submitting this Bid, Bidder represents that:

- a. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

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

- b. 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. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- c. Bidder has reviewed and checked all information and data shown or indicated on the Bidding Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by Bidder in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Document, including specifically the provisions of Paragraph 4.03 of the General Conditions.

- d. Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
  - e. 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. 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.
  - f. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation; 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
4. Bidder will complete the work including all equipment, materials, labor and installation for the following Total Base Bid Contract Price based on the estimated quantities and the Bidder provided Unit Prices included in Attachment A.

**TOTAL BASE BID CONTRACT PRICE:**

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(WRITTEN)

(\$ \_\_\_\_\_ )



**BID FORM ATTACHMENT A  
BASE BID PRICES**

**PROJECT: HOSPITAL WATER MAIN REROUTE**

<b>Bid Item No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Unit Price</b>	<b>Amount</b>
1.	Mobilization	LS	LUMP SUM		\$_____.
2.	Directional Drill 8" Water Main	LF	1065	\$_____.	\$_____.
3.	Directional Drill 10" Water Main	LF	340	\$_____.	\$_____.
4.	6" Shutoff Valve	EA	3	\$_____.	\$_____.
5.	8" Shutoff Valve	EA	4	\$_____.	\$_____.
6.	10" Shutoff Valve	EA	3	\$_____.	\$_____.
7.	Connect to Existing System	EA	6	\$_____.	\$_____.
8.	Remove & Replace Surfacing	SF	630	\$_____.	\$_____.
9.	Traffic Control	LS	LUMP SUM		\$_____.
<b>TOTAL BASE BID</b>				<b>\$_____.</b>	

5. Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.
6. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.
7. The Work will be substantially completed within 35 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 42 days after the date when the Contract Times commence to run.
  - a. Late start date: February 20<sup>th</sup>, 2017
  - b. Bidder accepts the provisions of the Agreement as to liquidated damages.
8. Required Bid Security is attached to and made a condition of this Bid.
9. Communications concerning this Bid shall be addressed to:
  - a. The address of BIDDER indicated below.
10. Terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

SUBMITTED on \_\_\_\_\_, 20.

**BID SUBMITTAL**

This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_  
(Individual's signature)

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_  
(SEAL)

State of Incorporation: \_\_\_\_\_  
Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
(Signature -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_  
(CORPORATE SEAL)

Attest \_\_\_\_\_

Date of Qualification to do business in \_\_\_\_\_ is  
\_\_\_\_/\_\_\_\_/\_\_\_\_.

A Joint Venture

Name of Joint Venture: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_  
(SEAL)

By: \_\_\_\_\_  
(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Second Joint Venturer Name: \_\_\_\_\_(SEAL)

By: \_\_\_\_\_  
(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(Each joint venturer 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.)

Bidder's Business Address \_\_\_\_\_  
\_\_\_\_\_

Phone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

E-mail \_\_\_\_\_

SUBMITTED on \_\_\_\_\_, 20\_\_\_\_.

State Contractor License No. \_\_\_\_\_ [If applicable]

SECTION 00500

SUGGESTED FORM OF AGREEMENT  
BETWEEN OWNER AND CONTRACTOR  
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between Clay Center Public Utilities Commission (“Owner”) and  
\_\_\_\_\_ (“Contractor”).

Owner and Contractor hereby agree as follows:

**PART 1. WORK**

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

Install new water main along Anthony Street from 5<sup>th</sup> to 7<sup>th</sup> and along 7<sup>th</sup> Street from Anthony to Liberty. Main items of work include Directional Drill 8” Water Main, 1065 LF; Directional Drill 10 “ Water Main, 340 LF; Shutoff Valves, 10 EA; Connect to Existing System.

**PART 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:

The work described in Part 1 is the same as the project in its entirety.

**PART 3. ENGINEER**

3.01 The Project has been designed by CES Group P.A. (Engineer), which 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.

**PART 4. CONTRACT TIMES**

4.01 *Time of the Essence*

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

4.02 *Days to Achieve Substantial Completion and Final Payment*

A. The Work will be substantially completed within 35 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General

Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 42 days after the date when the Contract Times commence to run.

#### 4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial 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 \$300 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$500 for each day that expires after the time specified in Paragraph 4.02 above 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 an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A

- A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that item:

See Bid Form Attachment A

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 9.07 of the General Conditions.

### **ARTICLE 6 – PAYMENT PROCEDURES**

#### 6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

#### 6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 1st day of each month during

performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of 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 in the General Requirements.

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 Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.

a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

### 6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

## **ARTICLE 7 – INTEREST**

7.01 Not Used

## **ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS**

8.01 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 as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.
- E. Based on the information and observations referred to in Paragraph 8.01.D above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- F. 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.
- G. 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.
- H. 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**

### **9.01 Contents**

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 00500-1 to 00500-7, inclusive).
  - 2. Performance bond (pages 00610-1 to 00610-2, inclusive).
  - 3. Payment bond (pages 00620-1 to 00620-2, inclusive).
  - 4. General Conditions (pages 1 to 45, inclusive).
  - 5. Supplementary Conditions (pages 00810-1 to 00810-4, inclusive).
  - 6. Specifications as listed in the table of contents of the Project Manual.
  - 7. Drawings consisting of 10 sheets with each sheet bearing the following general title: Clay Center Public Utility Commission, Hospital Water Main Reroute



8. Addenda (numbers \_\_\_\_ to \_\_\_\_, inclusive).
  9. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages 00300-1 to 00300-6, inclusive).
  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 (pages 00710-1, inclusive).
    - b. Work Change Directives.
    - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

## **ARTICLE 10 – MISCELLANEOUS**

### 10.01 *Terms*

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

### 10.02 *Assignment of Contract*

- A. 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.

### 10.03 *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.

### 10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions

shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

#### 10.05 *Contractor's Certifications*

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

#### 10.06 *Other Provisions*

- A. None

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on \_\_\_\_\_ (which is the Effective Date of the Agreement).

OWNER:

Clay Center Public Utilities Commission

By: \_\_\_\_\_

Title: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

Superintendent's Office

427 Court, PO Box 37

Clay Center, KS 67432

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

CONTRACTOR

\_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

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

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

License No.: \_\_\_\_\_

(Where applicable)

Agent for service of process:

\_\_\_\_\_

SECTION 00610

**PERFORMANCE BOND**

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

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

OWNER (*Name and Address*):

Clay Center Public Utilities  
Commission  
427 Court  
Clay Center, KS 67432

CONTRACT

Effective Date of Agreement:  
Amount:  
Description (*Name and Location*):

BOND

Bond Number:  
Date (*Not earlier than Effective Date of Agreement*):  
Amount:  
Modifications to this Bond Form:

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

\_\_\_\_\_  
Contractor's Name and Corporate Seal (Seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (Attach Power of Attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.
2. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
  - 2.1 Owner has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
  - 2.2 Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and
  - 2.3 Owner has agreed to pay the Balance of the Contract Price to:
    1. Surety in accordance with the terms of the Contract; or
    2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.
3. When Owner has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:
  - 3.1 Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
  - 3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
  - 3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
  - 3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
    1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
    2. Deny liability in whole or in part and notify Owner citing reasons therefor.
4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 3.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
5. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To the limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
  - 5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;
  - 5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and
  - 5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.
6. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.
7. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.
8. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located, and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
9. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.
10. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
11. Definitions.
  - 11.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
  - 11.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
  - 11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
  - 11.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – (Name, Address and Telephone)

Surety Agency or Broker:

Owner's Representative (*Engineer or other party*): CES Group P.A., 1102 Broadway, Marysville KS 66508  
785-562-5148

SECTION 00620

**PAYMENT BOND**

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

CONTRACTOR (*Name and Address*):

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

OWNER (*Name and Address*):

Clay Center Public Utilities Commission  
427 Court, Clay Center, KS 67432

CONTRACT

Effective Date of Agreement:

Amount:

Description (*Name and Location*):

BOND

Bond Number:

Date (*Not earlier than Effective Date of Agreement*):

Amount:

Modifications to this Bond Form:

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

\_\_\_\_\_  
Contractor's Name and Corporate Seal (Seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (Attach Power of Attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
  - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and
  - 2.2 Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
  - 4.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
  - 4.2 Claimants who do not have a direct contract with Contractor:
    1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
    2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
    3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. Reserved.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders, and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
15. Definitions
  - 15.1 Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
  - 15.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
  - 15.3 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract, or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – *(Name, Address, and Telephone)*

Surety Agency or Broker:

Owner's Representative (*Engineer or other*): CES Group P.A., 1102 Broadway, Marysville, KS 66508  
785-562-5148

SECTION 00700

NOTICE OF AWARD

Date: \_\_\_\_\_

Project: Hospital Water Main Reroute

Owner: Clay Center Public Utilities Commission

Owner's Contract No.:

Contract:

Engineer's Project No.: 162535

Bidder:

Bidder's Address:

You are notified that your Bid dated \_\_\_\_\_ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for \_\_\_\_\_

*[Indicate total Work, alternates, or sections of Work awarded.]*

The Contract Price of your Contract is \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

\_\_\_\_\_ copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

\_\_\_\_\_ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner [\_\_\_\_\_] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the Instructions to Bidders (Part 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.01).
3. Other conditions precedent:  
\_\_\_\_\_

EJCDC C-510 Notice of Award

Prepared by the Engineers Joint Contract Documents Committee and endorsed by the Construction Specifications Institute.



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

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

Clay Center Public Utilities Commission  
Owner

By: \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

Copy to Engineer

SECTION 00710

**NOTICE TO PROCEED**

Date: \_\_\_\_\_

Project: Hospital Water Main Reroute

Owner: Clay Center Public Utilities Commission

Owner's Contract No.:

Contract:

Engineer's Project No.: 162535

Contractor:

Contractor's Address:

You are notified that the Contract Times under the above Contract will commence to run on\_\_\_\_\_. On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement, the number of days to achieve Substantial Completion is 35, and the number of days to achieve readiness for final payment is 42.

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insured and loss payees) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must:  
*(add other requirements)*

\_\_\_\_\_  
Owner

By:

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Copy to Engineer

\_\_\_\_\_  
EJCDC C-550 Notice to Proceed  
Prepared by the Engineers Joint Contract Documents Committee and endorsed by the Construction Specifications Institute.

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

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

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*A Practice Division of the*  
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Endorsed by



CONSTRUCTION SPECIFICATIONS  
INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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STANDARD GENERAL CONDITIONS OF THE  
CONSTRUCTION CONTRACT

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. 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 which is evidence of the agreement between Owner and Contractor covering the Work.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
  5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
  7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
  8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
  9. *Change Order*—A document recommended by Engineer 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, issued on or after the Effective Date of the Agreement.
  10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
  11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
  12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
  13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
  14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
  15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
  16. *Cost of the Work*—See Paragraph 11.01 for definition.



17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given 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 under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *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.
40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *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 for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *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 at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *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, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

- A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

**ARTICLE 2 – PRELIMINARY MATTERS**

2.01 *Delivery of Bonds and Evidence of Insurance*

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

- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement 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 Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), 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 Documents;
  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.

2.06 *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 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, 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 instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
  1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the

Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

### **ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE**

#### **3.01 Intent**

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

#### **3.02 Reference Standards**

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

#### **3.03 Reporting and Resolving Discrepancies**

##### **A. Reporting Discrepancies:**

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, 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) any standard, specification, manual, or code, or (c) 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 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
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 Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
  - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); 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 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
  1. A Field Order;
  2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
  3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
  1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
  2. 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.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

**ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- 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 the Work is to be performed 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.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

- A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:
  - 1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
  - 2. is of such a nature as to require a change in the Contract Documents; or
  - 3. differs materially from that shown or indicated in the Contract Documents; or
  - 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

- B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.
- C. *Possible Price and Times Adjustments:*
1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition 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 meet any one or more of the categories described in Paragraph 4.03.A; and
    - 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 Paragraphs 9.07 and 11.03.
  2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
    - a. Contractor knew of the existence of such conditions at the time Contractor made a final 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
    - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
    - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
  3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all such information and data;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents;
    - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and



- d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *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.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
  1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) 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 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. 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. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. 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 a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 – BONDS AND INSURANCE

### 5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority

to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

#### 5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

#### 5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

#### 5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
  - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
  - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
  - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
    - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
    - b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
  6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
  2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
  3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
  4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
  5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
  6. include completed operations coverage:
    - a. Such insurance shall remain in effect for two years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
  2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, 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.

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
  4. 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;
  5. allow for partial utilization of the Work by Owner;
  6. include testing and startup; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, 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. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

**ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES**

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification

of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

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

#### 6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

#### 6.03 *Services, Materials, and Equipment*

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

#### 6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 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 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

#### 6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description 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 or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
  - 1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval

of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
  - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
  - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
  - 3) it has a proven record of performance and availability of responsive service.
- b. Contractor certifies that, if approved and incorporated into the Work:
  - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - 1) shall certify that the proposed substitute item will:
    - a) perform adequately the functions and achieve the results called for by the general design,
    - b) be similar in substance to that specified, and
    - c) be suited to the same use as that specified;
  - 2) will state:
    - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
    - b) 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
    - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
  - 3) will identify:
    - a) all variations of the proposed substitute item from that specified, and
    - b) available engineering, sales, maintenance, repair, and replacement services; and



- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
  - C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
  - D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
  - E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. 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.
  - F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

#### 6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
  1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
  2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

#### 6.07 *Patent Fees and Royalties*

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

#### 6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear 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. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *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.

6.11 *Use of Site and Other Areas*

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

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
3. 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 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 by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site 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 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 property to stresses or pressures that will endanger it.

6.12 *Record Documents*

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

6.13 *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. 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, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
    - a. Submit number of copies specified in the General Requirements.
    - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.
  2. *Samples:*
    - a. Submit number of Samples specified in the Specifications.
    - b. 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 6.17.D.
- B. 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. *Submittal Procedures:*
1. Before submitting each Shop Drawing or Sample, Contractor shall have:
    - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
    - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
    - c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
  2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
  3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.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's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

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

6.20 *Indemnification*

- A. 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 performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

### **ARTICLE 7 – OTHER WORK AT THE SITE**

#### 7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
  - 1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. 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. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
  - C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, 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.

#### 7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
  1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  2. the specific matters to be covered by such authority and responsibility will be itemized; and
  3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

### **ARTICLE 8 – OWNER'S RESPONSIBILITIES**

#### 8.01 *Communications to Contractor*

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

#### 8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.



- 8.03 *Furnish Data*
- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.
- 8.04 *Pay When Due*
- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.
- 8.05 *Lands and Easements; Reports and Tests*
- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 8.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.
- 8.07 *Change Orders*
- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.
- 8.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.
- 8.09 *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.
- 8.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.
- 8.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.
- 8.12 *Compliance with Safety Program*
- 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 pursuant to Paragraph 6.13.D.

## **ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION**

- 9.01 *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 Documents.

9.02 *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 9.09. 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.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which 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. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

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

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.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 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

## ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

### 10.01 *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 by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

### 10.02 *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 as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

### 10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
  - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
  - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
  - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

### 10.04 *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.

### 10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The

opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
  2. approve the Claim; or
  3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## **ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### 11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
  3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
  4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
  - g. The cost of utilities, fuel, and sanitary facilities at the Site.
  - h. Minor expenses such as telegrams, long distance telephone calls, telephone 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 Contractor is required by the Contract Documents to purchase and maintain.

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

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *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:*
  - 1. Contractor agrees that:
    - a. 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
    - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
  - 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *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. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- 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. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  - 2. there is no corresponding adjustment with respect to any other item of Work; and
  - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

### 12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for 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, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
  - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
  - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee*: The Contractor's fee for overhead and profit shall be determined as follows:
  - 1. a mutually acceptable fixed fee; or
  - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

### 12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.



12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

**ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

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

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
  - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
  - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
  - 3. as otherwise specifically provided in the Contract Documents.

- 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 and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. 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.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, 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, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such 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 Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *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, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. repair such defective land or areas; or
  - 2. correct such defective Work; or
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) 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 pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

- B. In exercising the rights and remedies under this Paragraph 13.09, 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, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, 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 (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) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. 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 13.09.

**ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION**

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

- 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
- 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
- 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications:*

- 1. Engineer will, within 10 days after receipt of each Application for Payment, 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 9.07, 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 Documents; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
  - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

- 1. Owner may refuse to make payment of the full amount recommended by Engineer because:
  - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

- b. 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;
  - c. there are other items entitling Owner to a set-off against the amount recommended; or
  - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action 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, when Contractor remedies the reasons for such action.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *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 (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- 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 tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. 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 tentative list.

14.05 *Partial Utilization*

- 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. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and 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 14.04.A through D for that part of the Work.
2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and 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 14.04 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 5.10 regarding property insurance.

#### 14.06 *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 is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *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, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
  - b. consent of the surety, if any, to final payment;
  - c. a list of all Claims against Owner that Contractor believes are unsettled; and
  - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) 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.

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. 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. *Payment Becomes Due:*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
  1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
  2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

**ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION**

15.01 *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 notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will 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 established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
  2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;



3. Contractor's repeated disregard of the authority of Engineer; or
  4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
  2. 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
  3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.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 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) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed 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.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. 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. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

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

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 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 16 – DISPUTE RESOLUTION**

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
  - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
  - 2. agrees with the other party to submit the Claim to another dispute resolution process; or
  - 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

**ARTICLE 17 – MISCELLANEOUS**

17.01 *Giving Notice*

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

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents 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.

17.03 *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 Documents. 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.

17.04 *Survival of Obligations*

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

17.05 *Controlling Law*

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

17.06 *Headings*

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



## SECTION 00810

### SUPPLEMENTARY CONDITIONS

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These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (C-700, 2007 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.

#### SC-1.01 DEFINITIONS

The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract (C-700, 2007 Edition) have the meanings assigned to them in the General Conditions.

1.01.A.19 Delete Paragraph 1.01.A.19 of the General Conditions in its entirety and insert the following in its place:

The term Architect/Engineer used in the Contract Documents shall mean Engineer as defined here.

#### SC-2.02 COPIES OF DOCUMENTS

Delete Paragraph 2.02.A of the General Conditions in its entirety and insert the following in its place:

Owner shall furnish to Contractor up to four printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

#### SC-2.03 COMMENCEMENT OF CONTRACT TIMES; NOTICE TO PROCEED

Delete Paragraph 2.03.A of the General Conditions in its entirety and insert the following in its place:

The Contract Times will commence to run on the day indicated in the Notice to Proceed.

#### SC-4.02 NOT USED AS PART OF THIS AGREEMENT

#### SC-4.05 REFERENCE POINTS

Delete Paragraph 4.05A of the General Conditions in its entirety and insert the following in its place:

Contractor shall employ and pay for services of a qualified, independent land surveyor, licensed to practice within the State of Kansas to perform all land surveys to lay out the work.

Employment of land surveyor shall in no way relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

SC-4.07 Add the following new paragraph(s) immediately after paragraph 4.06.I:

#### 4.07 HISTORICAL AND ARCHEOLOGICAL CONDITION AT SITE

- A. If Contractor encounters evidence of deposits of historical or archaeological Conditions Contractor shall immediately: (i) secure or otherwise isolate such conditions; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall notify the Kansas Department of Health and Environment and the Executive Director, Kansas State Historical Society, 6425 SW 6<sup>th</sup>, Topeka, KS 66615.
- B. No further disturbance of the deposits shall ensue until the Contractor has been notified by the Owner that they may proceed. The owner will issue a notice to proceed only after the State official has surveyed the find and made a determination to the Kansas Department of Health and Environment and the Owner. Compensation to the Contractor, if any, for lost time or changes in construction to avoid the find, shall be determined in accordance with changed conditions or change order provisions of the Contract Documents. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contractor Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefore as provided in paragraph 10.05.

#### SC-5.04 CONTRACTOR'S LIABILITY INSURANCE

The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide the following coverages for not less than the following amounts or greater where required by Laws and Regulations:

5.04.A.1. and 5.04.A.2 Workers' Compensation, etc., under paragraphs 5.04.A.1 and 5.04.A.2 of the General Conditions:

- |   |           |
|---|-----------|
| (1) State:                                    | Statutory |
| (2) Applicable Federal (e.g. Longshoreman's): | Statutory |

(3) Employer's Liability: \$ 300,000

5.04.A.3 through 5.04.A.6 Contractor's Liability Insurance under paragraphs 5.04.A.3 through 5.04.A.6 of the General Conditions which shall also include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:

(1):	General Aggregate (Except Products – Completed Operations)	\$500,000
(2):	Products – Completed Operations Aggregate	\$500,000
(3):	Personal and Advertising Injury (Per Person/Organization)	\$500,000
(4):	Each Occurrence (Bodily Injury and Property Damage)	\$500,000
(5):	Property Damage liability insurance will provide Explosion, Collapse and Underground coverages where applicable.	\$500,000
(6):	Excess or umbrella liability, General Aggregate	\$2,000.00

5.04.6 Automobile Liability:

(1):	Bodily Injury	
	Each Person	\$500,000
	Each Accident	\$500,000
(2):	Property Damage	
	Each Accident	
	or a combined single limit	\$500,000

5.04.B.1 Liability coverage for Owner, Engineer, Engineer's Consultants and others listed in the Supplementary Conditions will be provided, subject to customary exclusions for professional liability by endorsement as additional insureds on Contractor's Liability Policy.

5.04.B.4 The Contractual Liability required by Paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

(1):	General Aggregate	\$500,000
(2):	Each Occurrence (Bodily Injury and Property Damage)	\$500,000

#### SC-5.06 PROPERTY INSURANCE

5.06 Property insurance to the full replacement cost of the Work (subject to deductible amount per paragraph 3.B herein) in accordance with paragraph 5.06 of the General Conditions will be provided by OWNER.

5.06.D Add the following paragraph immediately after paragraph 5.06.D of the General Conditions which is to read as follows:

5.06.D.1 The property insurance will be subject to the following deductible amounts in accordance with Paragraph 5.06 D of the General Conditions, \$500.00.

#### SC-5.07 WAIVER OF RIGHTS

In Paragraph 5.07.A of the General Conditions, delete the last sentence of the paragraph in its entirety that reads "None of the above waivers...or otherwise payable under policy so issued."

#### SC-5.08 NOT USED AS PART OF THIS AGREEMENT

#### SC-5.09 ACCEPTANCE OF BONDS AND INSURANCE

"5.09. If Owner has any objections to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by Contractor in accordance with Paragraphs 5.03, 5.04, and 5.06 on the basis of its not complying with the Contract Documents, Owner shall notify Contractor in writing thereof within ten (10) days of the date of delivery of such policies to Owner in accordance with Paragraph 2.05, Owner and Contractor shall each provide to the other such additional information in respect of insurance provided by each as the other may reasonably request. Failure by Owner or Contractor to give any such notice of objection within the time provided shall constitute acceptance of such insurance purchased by the others as complying with the Contract Documents."

#### SC-6.07 PATENT FEES AND ROYALTIES

Delete the second sentence of paragraph 6.07.

#### SC-6.10 TAXES

Add the following language at the end of Paragraph 6.10 of the General Conditions:

Owner is exempt from Kansas State Sales Tax on materials and equipment to be incorporated in the work.

#### SC-12.03 Delays

Add the following language at the end of Paragraph 12.02.C:

Normal inclement weather is not considered as abnormal weather or an act of God. Extensions in Contract Time for abnormal weather shall be judged on the National Oceanic and Atmospheric Administration (NOAA) Local Climatological Data records for the area in which the project is being constructed. NOAA averages will be considered normal inclement weather. Contractor shall be responsible for obtaining, preparing and presenting the appropriate weather data to support and substantiate Contractor's request for an Extension in Contract Time for abnormal weather.

END OF SECTION



**SECTION 01100 – MEASUREMENT AND PAYMENT**

**PART 1. GENERAL**

1.1 DESCRIPTION:

A. Payment for work performed by the CONTRACTOR under these Contract Documents will be made at the contract unit price for each of the items listed in the bid form and as measured as specified in this section. Such payment shall compensate the CONTRACTOR for all costs in connection with furnishing all labor, equipment and material required and performing the operations necessary to complete the items in accordance with the Contract Documents. All incidental work essential to completion of the project including cleanup and disposal of waste or surplus material shall be accomplished by the CONTRACTOR at no additional cost to the OWNER. Quantities listed in the bid are not final and are indicated only for use in comparing bids. Payment will be made for actual quantities constructed or installed as authorized by the contract documents; be they more or less than those listed; said quantities being measured and determined as follows:

Item No. 1 “Mobilization” will be paid for as a percentage of the lump sum unit price as the project progresses (see table below) for all preparatory work and operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site and for all other work and operations which must be performed or costs incurred prior to beginning work on the various items on the project site.

Mobilization Partial Payments	
% of Contract Completed	% of Mobilization
5	25
10	50
25	60
50	100

Item No. 2 “Directional Drill 8-Inch Water Main” & Item No. 3 “Directional Drill 10-Inch Water Main” will be paid for at the contract unit price per linear foot, measured on the centerline of the pipe installed. This item will include; open excavation and over-excavation of trench; boring under or removing and replacing surface obstructions not designated for separate payment; discovery and protection of subsurface obstructions; pipe bedding; furnishing and installing all pipe, fittings, bends, caps or plugs; couplings, joint materials, restrained joints; concrete encasement as required; thrust blocking; backfilling and compaction; disposal of surplus and waste materials; flushing and disinfecting the line; pressure and leakage testing; grading; seeding; and all miscellaneous work required to complete this item.

Item No 4 “6-Inch Shutoff Valve”, Item No 5 “8-Inch Shutoff Valve” & Item No 6 “10-Inch Shutoff Valve” will be paid for as each valve is installed and connected to the

waterline. Includes any excavation, compaction, backfill, installation, concrete thrust blocking, and valve box as specified as shown in the drawings.

Item No. 7 “Connect to Existing System” will be paid for at the contract unit price for each such connection made. This item will include:

1. coordinating shutdown of system with Owner;
2. operating existing system valves;
3. uncovering and verifying the fittings required for the connection
4. furnishing personnel, equipment, and materials and fittings to make connection;
5. excavation, trenching, pumping, grading, backfilling and compaction of earthwork;
6. Replacement of curb & gutter or any pavement disturbed.
7. installing concrete blocking, restrained joints;
8. testing, flushing, and disinfecting;
9. disconnection of existing waterline, cap and block, where indicated on Drawings;
10. and all miscellaneous work required to complete this item.

Item No. 8 “Remove and Replace Surfacing” will be paid for by the square foot of surfacing that is replaced. Includes removal of existing surfacing, excavation, compaction, backfill, installation of temporary aggregate surfacing as indicated in the drawings, and reimbursement to the City of Clay Center for permanent surfacing at a rate of \$8/SF.

Item No. 9 “Traffic Control” will be paid for at the lump sum unit price for all work related to furnishing, installing and maintaining all traffic control items throughout the project. The payment shall be proportional to the percentage of work complete as specified.

**PART 2. PRODUCTS – not used.**

**PART 3. EXECUTION – not used.**

***END OF SECTION***

**SECTION 01400 - QUALITY CONTROL****PART 1. GENERAL**

## 1.1 SECTION INCLUDES:

- A. Quality assurance and control of installation.
- B. References and Standards.
- C. Testing and Standards.
- D. Resident Observation.
- E. Offsite Inspection.
- F. Examination.
- G. Preparation.

## 1.2 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturer's instruction, including each step in sequence.
- C. Should manufacturer's instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.

## 1.3 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 by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving bids, 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 Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### 1.4 TESTING SERVICES

- A. All testing shall be performed or reviewed by an independent testing firm selected by OWNER and acceptable to Engineer.
- B. Testing, including sampling will be performed by the testing firm's personnel, in the general manner indicated in the specifications. Results of all tests shall be submitted to the Engineer for review.
- C. Testing Services paid for by Owner. Unless otherwise specified, Owner shall pay for all testing services in connection with the following, as incidental to Resident Observation.
  - 1. Compaction testing, including proctor, as required under section 02230.
  - 2. The making of all Concrete job cylinders and concrete testing, in accordance with Section 02500 and 03100.
- D. CONTRACTOR shall perform all water line tests as listed in the specifications in the presence of the Engineer.

#### 1.5 RESIDENT OBSERVATION

- A. The ENGINEER will perform periodic resident observation services throughout the project.
- B. Cooperate with ENGINEER; furnish safe access and assistance by incidental labor as requested.
  - 1. Notify the Engineer of the intention to begin, cease or resume operations. Such notice shall be given a sufficient time, minimum twenty-four (24) hours, in advance of operations to permit the proper persons to be present to make necessary preparations for the supervision of the work.
- C. Resident Observation does not relieve Contractor from performing Work according to Contract requirements.

#### 1.6 OFFSITE INSPECTION

- A. When the Specifications require inspection of materials or equipment during the production, manufacturing, or fabricating process, or before shipment, such services will be performed by the Engineer, and independent testing firm, or inspection organization acceptable to Owner.
- B. Contractor shall give appropriate written notice to Engineer not less than 10 days before offsite inspection services are required, and shall provide proper facilities and to cooperate with inspecting personnel in the performance of their duties.

### **PART 2. PRODUCTS – not used.**

**PART 3. EXECUTION – not used.**

***END OF SECTION***

## SECTION 01570 – TRAFFIC CONTROL

### PART 1. GENERAL

- 1.1 DESCRIPTION. Traffic Control from construction initiation to final acceptance of the project shall be the responsibility of the CONTRACTOR. The following section contains minimum standards to be met by CONTRACTOR.

### PART 2. MATERIALS

- 2.1 GENERAL. The CONTRACTOR shall furnish all necessary posts, skids, easels and supports as may be required for proper installation of traffic control devices. The size, shape, color of all signs, barricades, mountings and devices shall comply with the Manual on Uniform Traffic Control Devices for Streets and Highways. The size and layout of the message on the signs shall comply with the latest edition of "Standard Highway Signs and Standard Alphabets for Highway Signs" as approved by the American Association of State Highway Officials and the Department of Transportation, Federal Highway Administration. All signs and barricades shall be reflectorized with reflective sheeting. All barricades placed across a roadway shall be protected at night by approved yellow flashing lights. Other barricades, drums and signs shall be protected by yellow steady burn or flashing lights in accordance with the Manual on Uniform Traffic Control Devices; the lights shall be kept burning from sunset to sunrise.

### PART 3. EXECUTION

- 3.1 GENERAL. The CONTRACTOR shall provide, erect, remove, relocate, clean, replace and maintain at all times during the progress or temporary suspension of the work, suitable signs, barricades, fences or other necessary traffic control devices. Devices which are necessary only when work is actually being performed shall be removed from the road or completely covered with an opaque weatherproof material during periods when no work is in progress. The OWNER may require additional barricades, lights, flagpersons, watchpersons or other traffic control devices at any time or at any place that, in his opinion, it is necessary for proper traffic control devices at any time or at any place that, in his opinion, it is necessary for proper traffic control, however, this shall not relieve the CONTRACTOR of the responsibility of traffic control. CONTRACTOR shall check all traffic control devices daily to see they are maintained properly and performing their intended function.
- 3.2 DETOUR. The CONTRACTOR shall not route traffic on a detour unless written permission has been granted by the OWNER. The safe and satisfactory movement of the traffic through the project is of paramount importance and shall be the responsibility of the CONTRACTOR.
- 3.3 ONE-WAY TRAFFIC/FLAGMAN. When necessary to permit only one-way traffic, the CONTRACTOR shall provide courteous, competent flagpersons to direct traffic and to provide for the satisfactory operation of one-way traffic. When necessary to permit one-way traffic, the OWNER may permit the use of approved electric control signal lights in lieu of flagpersons for controlling traffic, and the continued use will be based upon satisfactory performance of the system to effectively move traffic through the area.

- 3.4 INCLEMENT WEATHER. During periods of inclement weather, or during periods of unusually heavy traffic, the OWNER may require all operations to cease in order to adequately handle the traffic. The OWNER reserves the right to require the suspension or delay of certain operations to aid the satisfactory movement of traffic.

***END OF SECTION***

**SECTION 01600 – MATERIALS AND EQUIPMENT****PART 1. GENERAL****1.1 SECTION INCLUDES:**

- A. Products.
- B. Transportation and handling.
- C. Storage and Protection.
- D. Product Options.
- E. Substitutions.

**1.2 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 where noted on the drawings. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Use interchangeable components of the same manufacturer, for similar components.

**1.3 TRANSPORTATION AND HANDLING:**

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are not damaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

**1.4 STORAGE AND PROTECTION:**

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weathertight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
- C. Provide bonded/insured off-site storage and protection when site does not permit on-site storage or protection.



- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure Products are undamaged and are maintained under specified conditions.

1.5 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 followed by words indicating no substitutions: No options or substitutions allowed.
- C. Products specified by naming one or more manufacturers followed by no other provisions: Like or equivalent products may be allowed with permission of the Engineer.

1.6 SUBSTITUTIONS

- A. Under provisions of General Condition 8.
- B. Substitutions may be considered when:
  - 1. Product becomes unavailable through no fault of the Contractor.
  - 2. Contractor feels substitute product will meet or exceed specified product in function and quality.
- C. The contractor shall document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. The Contractor assumes all responsibility for the quality, installation, and warranty for the Substituted product.
- E. No claims for additional costs or time extensions will be accepted by the Owner.
- F. The contractor will reimburse the Owner for charges of Engineer for evaluation of each proposed substitution.
- G. The Contractor shall submit in writing three (3) copies of the request for Substitution. Submit shop drawings, product data, and certified test results on the proposed substitution. Engineer will notify the Contractor, in writing, of decision to accept or reject the request.

**PART 2. PRODUCTS – not used.**

**PART 3. EXECUTION – not used.**

***END OF SECTION***

## **SECTION 02200 – EXCAVATION**

### **PART 1. GENERAL**

#### 1.1 SECTION INCLUDES:

- A. Excavate for paving.
- B. Excavate for structures.
- C. Removal of concrete curb & gutter, pavement, and sidewalk.

#### 1.2 SCOPE OF WORK

- A. Provide all labor, materials and equipment necessary for performing all excavation as shown on the drawings and specified herein.
- B. Schedule work with other contractors working on site.

#### 1.3 FIELD MEASUREMENTS:

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.

#### 1.4 BARRICADES AND WARNING SIGNS:

- A. The CONTRACTOR shall provide and maintain in place all barricades, warning signs, lights and other safety devices required to protect the work, divert traffic and warn the general public of open excavations, unfilled trenches and other areas or conditions which might be hazardous or dangerous during the daylight or dark.

#### 1.5 SHORING AND BRACING:

- A. All shoring, bracing and blocking shall be furnished and installed as required to preserve and maintain exposed excavation faces, to protect existing facilities, and to provide for the safety of workmen and the general public. All items of shoring and bracing shall be progressively removed as backfilling proceeds.

#### 1.6 OBSTRUCTIONS:

- A. Care shall be used while excavating, trenching or performing other work adjacent to any facilities intended to remain in place; except as otherwise specified, the CONTRACTOR shall be responsible for any damage to existing items and any repairs required shall be promptly made at his expense.

### **PART 2. PRODUCTS – not used**

### **PART 3. EXECUTION**

#### 3.1 PREPARATION

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.
- B. Identify required lines, levels, contours, and datum locations.
- C. Locate, identify, and protect utilities that remain from damage.
- D. Protect benchmarks, survey control points, existing structures, fences, sidewalks, paving and curbs from excavating equipment and vehicular traffic.

### 3.2 EXCAVATION

- A. Remove top-soil and stockpile neatly for later use.
- B. Excavate subsoil to accommodate paving and structure construction operations.
- C. Machine slope banks.
- D. Sawcut and remove curb and gutter, pavement and concrete base material to limits shown on plans.
- E. Hand trim excavation. Remove loose matter.
- F. Do not disturb bottom of excavation for footings and foundations. Excavate by hand to final grade just before concrete is placed. Trim bottoms to required lines and grades to leave solid base to receive concrete.
- G. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- H. Correct areas over excavated in accordance with Section 02210-Backfilling and Compacting of this section at no additional cost to the owner.
- I. Remove excess or unsuitable material from site.

### 3.3 CLASSIFICATION OF EXCAVATION

- A. All excavation will be unclassified, and the Contractor shall remove all substances encountered in excavating and trenching to the designated limits of grades. No separate or additional payment will be made for classification of materials, regardless of the nature, condition or moisture content.

### 3.4 PROTECTION

- A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing

### 3.5 QUALITY CONTROL

- A. Field inspection will be performed by the Owner.
- B. Provide for visual inspection of bearing surfaces.

***END OF SECTION***

## **SECTION 02210 – BACKFILLING AND COMPACTING**

### **PART 1. GENERAL**

#### **1.1 SECTION INCLUDES:**

- A. Site filling and back filling.
- B. Fill under slabs-on-grade and miscellaneous site structures.
- C. Consolidation and compaction
- D. Fill for over excavation.
- E. Fill under pavement.
- F. Top soiling

#### **1.2 SCOPE OF WORK**

- A. Provide all labor, materials and equipment necessary for performing all backfilling and compacting as shown on the drawings and specified herein.
- B. Schedule work with other contractors working on site.

### **PART 2. PRODUCTS**

#### **2.1 FILL MATERIALS**

- A. Subsoil – Reused or Imported, free of gravel no larger than 3 inches in size, organic matter and debris.
- B. Coarse Aggregate Type A1 (Gravel)
- C. Fine Aggregate Type A2 (Sand)

#### **2.2 TOP SOIL – Imported friable loam; free of subsoil, roots, grass, excessive weeds and gravel, large stones, broken glass, debris, and toxic substances.**

### **PART 3. EXECUTION**

#### **3.1 PREPARATION**

- A. Proof roll exposed subgrade with a vehicle weighing at least 25 tons to locate zones that are soft or unstable.
- B. Generally, compact subgrade to density requirements for subsequent backfill materials.

- C. Cut out soft areas of subgrade not capable of insitu compaction. Backfill with imported subgrade fill and compact to density equal to or greater than requirements for subsequent backfill material.
- D. Prior to placement of aggregate base course material at gravel paved areas, compact subsoil to 95 percent of its maximum dry density in accordance with ANSI/ASTM D 698.
- E. The contractor shall verify with the Engineer/Inspector that fill materials to be re-used are acceptable for intended use.
- F. Prior to placement of fills, paving, and pavement base, scarify and recompact the exposed subgrade to a minimum depth of eight (8") inches. Compaction shall be at optimum moisture to the required density.

### 3.2 BACKFILLING

- A. Refer to drawings and cross sections for slopes, and elevations.
- B. Backfill areas to contours and elevations with approved, unfrozen materials.
- C. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- D. Soil Fill: Place and compact approved materials in equal continuous layers not exceeding 6 inches compacted depth. Fills for small areas, where it is not practical to operate power equipment, shall be placed in 3-inch layers and compacted with pneumatic tampers or by hand methods until required density has been attained.
- E. For cohesive soil backfill material, maintain a moisture content of 3% below to 3% above optimum moisture, as determined by ANSI/ASTM D 698 to attain required compaction density.
- F. Employ a placement method that does not disturb or damage other work.
- G. Make gradual grade changes. Blend slope into level areas.
- H. Remove surplus backfill materials from site.

### 3.3 COMPACTING

- A. Maintain a moisture content of 3% below to 3% above optimum for backfill materials to attain required compaction density. The required compaction density shall be 95% of the maximum dry density under slabs and pavements and minimum 85% maximum dry density in turf areas all as determined by ASTM D698 (Standard Proctor). Within turf and landscape areas, do not exceed 90% maximum dry density in top twelve (12") inches of finished subgrade.
- B. Owner or their representative shall be allowed to inspect and approve each subgrade and fill layer before further fill/backfill or construction work is performed. Agency

shall perform field density tests at the following minimum frequencies, with no less than 3 tests per layer:

1. Beneath building pad: One test per 2,500 sq.ft.
2. Beneath pavements: One test per 5,000 sq.ft.
3. Trench backfill: One test per 200 lin.ft. of trench.
4. Beneath turf and lawn areas: One test per 5,000 sq.ft.

3.4 TOPSOIL PLACEMENT:

- A. Place topsoil in all areas disturbed by construction in a compacted layer of 4 inches, minimum.
- B. Fine grade topsoil eliminating rough and low areas. Develop smooth, uniformly contoured surface with slopes and drainage ways shaped to drain.
- C. Use topsoil in dry state.
- D. Manually spread topsoil around trees to prevent damage.
- E. Lightly compact placed topsoil.
- F. Remove surplus subsoil and topsoil from site.
- G. Leave stockpile area and site clean and raked, ready for seeding.

3.5 TOLERANCES:

- A. *Top Surface of Backfilling Under Paved Areas*: Plus ¼-inch or minus 1 inch from required elevations.
- B. *Top Surface of General Backfilling*: Plus or minus 1 inch from required elevations.
- C. *Topsoiling*: No ponding will be acceptable.

**END OF SECTION**

## SECTION 02230 – TRENCHING

### PART 1. GENERAL

#### 1.1 SECTION INCLUDES:

- A. Excavating trenches for utilities.
- B. Backfill and compaction of trenches.

#### 1.2 SCOPE OF WORK

- A. Provide all labor, materials and equipment necessary for performing all excavation as shown on the drawings and specified herein.
- B. Schedule work with other contractors working on site.

#### 1.3 FIELD MEASUREMENTS:

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.

### PART 2. PRODUCTS

#### 2.1 FILL MATERIALS

- A. Soil materials shall be sub soil reused or imported, free of gravel larger than 3-inch size, organic matter and debris or imported soils similar to those existing at the site.
- B. Flowable Fill Concrete shall consist of a self leveling, excavatable concrete material with a maximum 28 day compressive strength of 150 psi. The mix design shall generally be as follows:

Type 1 Portlant Cement	50-100 lbs/CY
Air Content	10%-30%

#### 2.2 BEDDING MATERIALS

- A. Bedding shall consist of well-graded crushed gravel material conforming to ASTM Designation C33, Gradation 7 (1/2 inch to No. 4) or Kansas Department of Transportation Standard Specifications, 2007 Edition for coarse aggregate CA-4 or CA-5.

### PART 3. EXECUTION

#### 3.1 PREPARATION

- A. Required lines and contours shall be identified.
- B. Plant life, lawns, and other landscaping items to remain shall be protected.



- C. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- D. Protect above and below grade utilities which are to remain.
- E. Soft areas of subgrade not capable of compaction in place shall be cut out. Replace with approved materials to density equal to or greater than requirements for subsequent backfill materials.

### 3.2 EXCAVATION

- A. Excavate all subsoil required to install the water piping. Trench shall be over excavated by 4 inches to allow for bedding material.
- B. Stone found in the trench shall be removed for a depth of at least 6 inches below the bottom of the pipe and replaced with bedding material.
- C. Trenches shall be wide enough to allow for installation of the utilities and inspection of the installation. Typically, the width of the trench shall be no less than 12 inches and not more than 18 inches greater than the outside diameter of the respective pipe.
- D. Remove all excavated material.
- E. Remove lumped subsoil, boulders, and rock up to 10 cubic feet measured by volume.
- F. Unauthorized excavation shall be corrected at no additional cost to the Owner.
- G. All excavated material shall be stockpiled in an area designated on site and excess material not being used should be removed from site.

### 3.3 BEDDING

- A. Continuous, uniform bedding should be provided in the trench.
- B. Material shall be tamped in layers not to exceed 4 inches to adequately support and protect the pipe.
- C. Bedding material shall extend 6 Inches minimum over the top of the pipe.
- D. The pipe shall be supported during placement and compaction of bedding fill.

### 3.4 BACKFILLING

- A. Trenches shall be backfilled to the contours and elevations shown on the plans.
- B. At no time shall frozen material be used to backfill.

- C. Backfill systematically to allow maximum time for settlement. Do not backfill over porous, wet, frozen or spongy subgrade materials.
- D. Granular Fill shall be placed and compacted in continuous layers not to exceed 6 inches of compacted depth.
- E. Soil Fill shall be placed and compacted in continuous layers not to exceed 8 inches of compacted depth.
- F. Hand compaction shall be used to a depth of 6 inches above the top of the pipe. Ensure material is tightly compacted around the pipe.
- G. Maintain optimum moisture content of backfill materials to attain required compaction density.
- H. Surplus backfill materials shall be removed from site.
- I. Stockpile areas shall be completely free of excess fill material.

### 3.5 TOLERANCES

- A. Top Surface of Backfilling: Under Paved Areas: Plus or minus 1/2-inch from required elevations.
- B. Top Surface of General Backfilling: Plus or minus one inch from the required elevation shown on the plans.

### 3.6 TESTING

- A. See Section 1400: Quality Control
- B. Moisture density relation tests and analysis of fill material will be performed in accordance with ASTM D698-00a
- C. Compaction testing will be performed in accordance with ASTM D1556-00 or ASTM 2922-01.
- D. During construction of embankments or backfills or preparation of subgrade soil, moisture content shall be determined in accordance with ASTM D 2216 or ASTM D3017.
- E. If tests result in unsatisfactory results, work will be removed, replaced, and retested at no additional cost to the Owner.
- F. Frequency of Testing
  1. *Piping*: Density tests will be performed at a rate of 1 test @ 3 ft depth and 1 test @ surface per 200 linear feet.
  2. *Pipe under streets, drives, driveways, and indicated areas*: Density tests will be performed at a rate of at least 1 test per lift per 200 linear feet or at least 1 per lift in shorter runs.

3.7 PROTECTION OF FINISHED WORK

- A. Compacted fills shall be protected from vehicular traffic. Should any disturbance occur, fills shall be recompact.

3.8 SCHEDULE OF WORK

- A. *Bedding Fill:* Bedding material, 4 inches below pipe invert to 12 inches above top of pipe, compacted to a minimum of 95%.
- B. *Backfilling:* Compact subsoil, in 6-Inch loose lifts, to no less than 95 percent of maximum dry density at or above optimum moisture content. Where noted, backfill with flowable fill.
- C. *Topsoil:* Cover trenches not under roadways with 6-inches of topsoil.

***END OF SECTION***

**SECTION 02310– WATER PIPE AND APPURTENANCES****PART 1. GENERAL****1.1 SECTION INCLUDES:**

- A. Pipe.
- B. Fittings.
- C. Special use fittings.
- D. Pipeline accessories.

**1.2 SCOPE OF WORK:**

- A. Provide all labor, materials and equipment necessary for installing all pipes and fittings as shown on the drawings and specified herein.
- B. Schedule work with other contractors working on site.

**1.3 SUBMITTALS:**

- A. Submittals shall include:
  - 1. Shop drawings and product data:
    - a. Polyvinyl Chloride (PVC) Pipe:
      - 1) Catalog cut and general bulletins.
      - 2) Materials of construction.
      - 3) Affidavit of compliance in accordance with ANSI/AWWA C900-97.
    - b. Ductile Iron Fittings:
      - 1) Catalog cut and general bulletins.
      - 2) Materials of construction.
      - 3) Manufacturer's certification of affidavit of compliance in accordance with specified ANSI/AWWA standards.
    - c. Steel Sleeve Encasement Pipe:
      - 1) Catalog cut and general bulletins.
      - 2) Materials of construction.
  - B. Manufacturer's Instructions for installation for all pipe and fittings utilized.

**1.4 PROJECT RECORDS:**

- A. Contractor shall accurately record exact location of all buried piping and fittings. Records shall be submitted to the Owner.

**1.5 REGULATORY REQUIREMENTS:**

- A. Kansas Department of Health and Environment (KDHE), *Policies, General Considerations and Design Requirements for Public Water Supply Systems in Kansas*, 2008 edition.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and protect products under provisions of section 01600.

## 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not install buried service pipelines when weather is unsuitable for type of work.

## PART 2. PRODUCTS

### 2.1 PIPE

#### A. Water Mains

1. Polyvinyl Chloride (PVC) Pipe, 4-inches and larger
  - a Pipe shall conform to ANSI/AWWA C 900
  - b Pipe shall be Class DR 18 (235 psi)
  - c Markings on pipe shall include seal of approval of the National Sanitation Foundation (NSF) and American Water Works Association (AWWA).
  - d Integral elastomeric-gasket bell end only.
2. High Density Polyethylene (HDPE) Pipe, 4-inches and larger
  - a Pipe shall conform to AWWA C906
  - b Shall be manufactured with PE 4710 resin conforming to ASTM D3350.
  - c Pipe shall be DR 11 ( 200 psi)
  - d Conform to ANSI/NSF-61, 14
  - e Cell Class per ASTM D3350
  - f Joints shall be butt-fused in accordance with ASTM F 2620 and manufacturer's recommendations.

#### B. Service Lines

1. Cross-Linked Polyethylene (PEX) Pressure Pipe (CTS), ½-inch through 3-inch
  - a To be used for all service connections
  - b Pipe shall be class SDR -9
  - c Conform to AWWA C 904
  - d Shall use CTS compression joint fittings according to AWWA C-800.
  - e Size shall be as shown on the Drawings.

#### C. Steel Sleeve Encasement Pipe:

1. 12-inch
  - a Use A-53 steel pipe.
  - b Minimum wall thickness: 0.344 inches.

### 2.2 FITTINGS

#### A. Polyvinyl Chloride (PVC):

1. 4-inch and larger: Utilize ductile iron mechanical joint as specified in paragraph 2.2.B.

**B. Ductile Iron:**

1. Buried Service, 4-inch and larger:
  - a All fittings used on this project shall be ductile iron.
  - b Fittings shall conform to ANSI/AWWA C110/A21.10-03 or ANSI/AWWA C153/A21.53-00.
  - c Fittings shall have mechanical joints with restraints.
  - d Fittings shall be cement-mortar lined per ANSI/AWWA C104/A21.4
  - e Gasket material: Rubber.
  - f Exterior coating: Asphaltic coating per AWWA C110, C115, C151, and C153.

**2.3 DIRECTIONAL DRILLING PIPE MATERIALS****A. Polyvinyl Chloride (PVC) Pipe and Fittings:**

1. Conform to AWWA C900/RJ, PVC Pressure-Rated Pipe, DR 18.
2. Utilize Certa-Lok Restrained-Joint Pipe or approved equal.
3. Pipe shall be joined using a separate PVC coupling with beveled edges, built-in sealing gaskets and restraining grooves. Integral bell Certa-Lok joints shall also be permissible. The restraining splines shall be made from Nylon 6/6.
4. Exposed splines shall be cut flush to coupling to reduce soil drag.
5. Couplings shall be beveled on leading edges to minimize soil friction.
6. The pipe shall be joined using non-metallic couplings which, together, have been designed as an integral system for maximum reliability and interchangeability. High strength flexible thermoplastic splines shall be inserted into matting precision-machined grooves in the pipe and coupling to provide full 360 degree restraint with evenly distributed loading.
7. Couplings shall be designed for use at the rated pressure of the pipe with which they are utilized, and shall incorporate twin elastomeric sealing gaskets meeting the requirements of ASTM F477. Joints shall be designed to meet the leakage test requirements of ASTM D3139.
8. Contractor shall adhere to the pipe manufacturer's most current calculations regarding tensile load limitation for trenchless application.
9. Contractor shall adhere to pipe manufacturer's most current recommendations regarding radius of curvature for Certa-Lok C900/RJ pipe used for trenchless application.

**B. High Density Polyethylene (HDPE) Pipe**

1. Pipe shall conform to AWWA C906
2. Shall be manufactured with PE 4710 resin conforming to ASTM D3350.
3. Pipe shall be DR 11 ( 200 psi)
4. Conform to ANSI/NSF-61, 14
5. Cell Class per ASTM D3350
6. Joints shall be butt-fused in accordance with ASTM F 2620 and manufacturer's recommendations.
7. Contractor shall adhere to the pipe manufacturer's most current calculations regarding tensile load limitation for trenchless application.
8. Contractor shall adhere to pipe manufacturer's most current recommendations regarding radius of curvature for Certa-Lok C900/RJ pipe used for trenchless application.

**2.4 SPECIAL USE FITTINGS**

- A. Restraining Gland:
1. Utilize to restrain mechanical joints.
    - a Conform to:
      - 1) Ductile iron gland per ASTM A536-80 and ASTM F1674-96.
      - 2) Gland capable of replacing standard mechanical joint gland.
      - 3) Bold hole size and spacing per ANSI/AWWA C111.A21.11.
      - 4) Twist-off nuts shall be same size as tee-head bolts.
      - 5) Appropriate spacers shall be provided with set screws to accommodate pipe on which installed.
      - 6) Gland shall have pressure rating equal to that of the pipe on which it is used.
      - 7) Corrosion resistant.
      - 8) Joint to be field installable, field removable, and re-installable.
      - 9) Sized per PVC listed above.
    2. Manufacturer/Model:
      - a Ebba Iron; Eastland, TX.
      - b Romac Industries; Bothell, WA
      - c Ford Meter Box Co. Inc.; Wabash, IN.
      - d Substitutions: See Section 01600
- B. Pipe Coupling:
1. Utilize to allow for connection of plain end pipelines.
    - a Conforms to:
      - 1) NSF 61 Listed.
      - 2) Meets applicable AWWA C219 Standards.
      - 3) Shall allow for limited expansion and contraction.
      - 4) Coupling sleeve and flanges shall have minimum yield of 30,000 PSI.
    2. Manufacturer:
      - a Smith-Blair, Inc: Texarkana, AR.
      - b Romac Industries, Inc.
      - c Substitutions: See Section 01600
- C. Transition Couplings:
1. Utilize to allow for connection of pipelines with differing outside diameters.
    - a Conforms to:
      - 1) NSF 61 Listed.
      - 2) Meets applicable AWWA C219 Standards.
      - 3) Shall allow for limited expansion and contraction.
      - 4) Coupling sleeve and flanges shall have minimum yield of 30,000 PSI.
    2. Manufacturer:
      - a Smith-Blair, Inc: Texarkana, AR.
      - b Romac Industries, Inc.
      - c Substitutions: See Section 01600
- D. Service Connection Couplings:
1. Utilize to allow for connection of different types and sizes of service pipelines.
    - a Conforms to:
      - 1) NSF 61 Listed.
      - 2) Connections shall utilize a Pack Joint Nut compressing a Buna-N beveled gasket ot make a water-tight seal.

- 3) Connection to copper or PVC pipe shall utilize a locking device, split clamp, which is drawn down securely on the tubing or pipe by tightening a stainless steel screw.
  - 4) Design to connect differing outside diameter service liens as well as differing pipe types.
2. Manufacturer:
    - a For Meter Box Company, Inc., Wabash, IN.
    - b Substitutions: See Section 01600.
- E. Service Saddles:
1. Utilize to tap into piping where shown on Drawings.
  2. Manufacturer: Mueller or Ford
  3. Model: Varies
  4. Saddle and Corp Stop shall be equipped with AWWA Taper Thread (C.C.)
- 2.5 PIPELINE ACCESSORIES
- A. Tracer Wire:
1. Shall be installed with all buried plastic waterline.
  2. Wire shall be plastic insulated, 12 gauge solid copper wire.
  3. Wire shall be installed directly with the pipe at the same level.
  4. Shall be brought up along the inside of the valve boxes, fire hydrants, air release assembly, or an access box.
  5. Splicing shall be provided using silicone splices approved for underground installations.

### **PART 3. EXECUTION**

#### **3.1 PREPARATION**

- A. Protect elements surrounding the work of this Section from damage or disfiguration.

#### **3.2 INSTALLATION**

- A. Pipe and materials shall be installed according to manufacturer's instructions.
- B. Installation of mains should follow applicable AWWA Standards and AWWA Manuals of Water Supply Practices. AWWA Standards include C600 – Installation of Ductile Iron Water Mains and their Appurtenances and C605 – Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.
- C. Buried Pipeline:
1. Excavate trench; place bedding and backfill; in accordance with Section 2230.
  2. Disconnection or connection to existing main:
    - a Avoid contamination to distribution system.
      - 1) Pump water from muddy trench.
      - 2) Liberally introduce approved disinfectant into open pipeline and fittings.
      - 3) Do not allow water from new pipeline into distribution system prior to disinfection and flushing.
    - b Deliver any existing fittings removed in the process of the disconnection or connection to OWNER at their designated storage site.
  3. Restrain Fittings:



- a Block all tees, plugs, bends and fire hydrants to prevent system pressure from displacing fittings.
  - b Concrete thrust blocks shall be cast in place or precast blocks and meet the minimum dimensions and general shape shown on the drawings. If cast in place blocking is utilized, fittings shall be covered in insulated plastic prior to pouring concrete.
  - c Mechanical Joint Restraints will be used along with concrete blocking. Restraints shall have a working pressure of at least 200 psi.
- D. Encased Pipeline:
1. Auger and jack encasement pipe into place.
  2. Support pipe in encasement on concentric support insulators.
    - a Insulator block thickness shall be adequate to prevent contact between the pipe joints and the encasement pipe.
    - b Insulator blocks shall be of high polyethylene or hard rubber, installed equally spaced on plastic coated steel cable for attachment to pipe.
    - c Use three insulators per joint of pipe.
  3. End seals shall be applied to each end of encasement pipe.
    - a Seals shall be heavy formed rubber or other material molded to fit diameter of encasement and passing pipes.
    - b Secure seals to pipes with stainless steel bands with stainless steel adjustable end clamps.
    - c End seals shall be a standard commercial type designed specifically for the application.

### 3.3 SEPARATION OF WATER MAINS AND POLLUTION SOURCES

- A. A minimum distance of 25 feet shall be maintained between all potable water lines and all septic tanks, waste stabilization ponds or open sewage discharge locations.
- B. Under no circumstances shall a water line extend through a septic tank tile absorption field, or feedlot. All water lines shall be located a minimum of 25 feet from the farthest known extent of any sewage absorption.
- C. Under no circumstances shall there be any physical connections between any parts of a potable water system and building sewers, sanitary sewers, or wastewater treatment facilities by means of which it would be possible for sewage, even under exceptional circumstances, to reach a well, storage reservoir, or distribution system.
- D. Under no circumstances shall there be any physical connection between the public water supply system (PWSS) and any pipes, pumps, hydrants, tanks, or non-potable water supplies whereby unsafe water or other contaminating materials may be discharged or drawn into the system.
- E. A minimum horizontal distance of 10 feet shall be maintained between parallel water and sewer lines. The laying of potable water lines and sanitary sewers shall be in separate trenches with undisturbed earth between them. In cases where it is not practical to maintain a 10-foot separation distance, the City shall consult with KDHE to utilize sanitary sewer construction with one of the following additional protective features: concrete encasement, vacuum sewers, or jointless pipe such as polyethylene or cured-in-place pipe liner.

- F. No water pipe shall pass through or come in contact with any part of a sewer manhole. Required horizontal separation distances between water mains and manholes are equivalent to those for water mains and gravity sanitary sewers.
- G. When a water pipe and a sanitary sewer cross and the sewer is 2 feet or more (clear space) below the water pipe, no special requirements or limitations are provided herein. At all other crossings, the sanitary sewer is to be constructed of one of the following materials (or approved equal) and pressure tested to assure water tightness pursuant to Chapter VI of the KDHE Minimum Standards of Design of Water Pollution Control Facilities:
  - 1. Utilize PVC pipe conforming to ASTM D3034 with minimum wall thickness of SDR26, ASTM F679, ASTM F789, or ASTM F794, with gasketed push-on joints in conformance with ASTM D3212. Joints in the sewer pipe shall be located as far as practical from the intersected water main.
  - 2. Utilize ductile iron pipe Class 150 designed in accordance with ANSI/AWWA C150/A21.50 and manufactured in accordance with ANSI AWWA C151/A21.51, with gasketed push-on joints or mechanical joints. Joints in the sewer pipe shall be located as far as practical from the intersected water main.
- H. Where a water main is laid across or through an area where there is an existing sanitary sewer, which is not constructed of one of the above specified materials and is 2 feet or less below the water pipe, the existing sewer shall be encased in concrete with a minimum of 6 inch thickness for a 10 foot distance on each side of the crossing or the crossed section of sewer requirements.
- I. When a water main and a sanitary sewer must cross, it is preferred that the water main cross over the sanitary sewer, regardless of whether the sanitary sewer is new or existing.
- J. When pressure sewer lines (force mains) run parallel to water lines, the separation distance shall be as far as practical, maintaining a minimum horizontal separation distance of at least 10 feet. There shall be at least a 2 ft vertical separation at crossings with the water main always crossing above the sewer force main. Where it is not practical to maintain the required horizontal or vertical separation distance between a water line and a sanitary sewer for main, KDHE will consider proposals providing equivalent protection by other methods on a case-by case basis, if supported by data from the design engineer.
- K. The separation distance between a storm sewer (which is not a combined storm/sanitary sewer) and a water main should be based on geotechnical considerations. Required separation distances between water mains and combined storm/sanitary sewers are equivalent of those for water mains and gravity sanitary sewers.
- L. Underground drains from fire hydrants, pits, or underground structures in general (valve pits, meter pits, underground pump stations, etc.) shall not be directly connected to sanitary or storm drains.

- M. Under no condition will it be considered that encasement of the water main through an area of real or potential pollution would provide the protection needed to the water supply.

### 3.4 TESTING

#### A. Pipeline Hydrostatic Test:

1. Test all buried pressure pipelines after installation in accordance with "Appendix C of KDHE Minimum Standards of Design, 2008 edition.
2. Provide all necessary water, piping, pumps, gauges and fittings required to perform the testing.
3. Water for testing shall be supplied by the Owner. Contractor to coordinate and keep track of approximate amount of water used.
4. Complete testing in presence of Owner/Inspector.
5. Test Pressure shall be 200 psi.
6. Test Duration shall be 2 hours (leakage & pressure tests).
7. Leakage: The amount of water required to be added to maintain required pressure during test period.
8. Permissible leakage:  
Maximum allowable leakage (L) in gallons per hour for PVC pipe:

$$L = \frac{S \times D \times \sqrt{P}}{148,000}$$

S = length of pipe tested, in feet.

D = nominal diameter of the pipe, in inches.

P = average test pressure during the leakage test, in pounds per square inch.

9. Ensure all air has escaped from line prior to testing. Tap and install manual air release assembly to permit air removal at any highpoint in pipeline which does not have a permanent air release installed.
10. Repair and retest any pipeline which has leakage in excess of permissible.
11. Prepare test reports that include:
  - a Date of test.
  - b Test pressure.
  - c Allowable leakage.
  - d Observed leakage.
  - e Indication of pass or fail.
  - f Signature of Contractor and Owner/Inspector.

**END OF SECTION**

## **SECTION 02320– HORIZONTAL DIRECTIONAL DRILLING**

### **PART 1. GENERAL**

#### **1.1 SECTION INCLUDES:**

- A. Horizontal directional drilling.

#### **1.2 SCOPE OF WORK:**

- A. Provide all labor, materials and equipment necessary for performing all horizontal directional drilling as shown on the drawings and specified herein.
- B. Schedule work with other contractors working on site.

#### **1.3 SUBMITTALS:**

- A. Experience: Actively engaged in horizontal directional drilling for a minimum of 3 years.
- B. Plans and procedures of proposed method and entire work operation for information including the following:
  - 1. Size, capacity and arrangement of equipment.
  - 2. Dewatering and methods of removing spoils materials.
  - 3. Method of installing detection wire and pipe.
  - 4. Type of cutting method.
  - 5. Method of monitoring and controlling line and grade.
  - 6. Detection of surface movement.
  - 7. Location and size of drilling and receiving pits.
  - 8. Bentonite drilling mud product information.

#### **1.4 PROJECT CONDITIONS:**

- A. Complete horizontal directional drilling so as not to interfere with, interrupt, or endanger surface and activity thereon.
- B. Do not use horizontal directional drilling in rock stratum or subsoil consisting of boulders and underground obstructions that impede the progress.

### **PART 2. PRODUCTS**

#### **2.1 MATERIALS**

- A. Pipe – See section 02310.
- B. Drilling fluid.
  - 1. Bentonite drilling mud compatible with the environment.

2. Waste oil or environmentally non-compatible polymers cannot be part of composition.
- C. Tracer Wire - See Section 02310.

### **PART 3. EXECUTION**

#### **3.1 PREPARATION**

- A. Provide equipment to guard against electrocution and an alarm system on drilling equipment capable of detecting electrical current as it approaches electric lines.
- B. Excavate pits per working plan approved by Engineer.
- C. Test pit underground utility crossings before horizontal directional drilling operation.

#### **3.2 OPERATION**

- A. Determine drilling length and equipment pull strength for type of soil encountered.
- B. Contractor shall provide all material, equipment, and facilities required for directional drilling.
- C. Provide method to control line and grade.
  1. Provide and maintain instrumentation that accurately locates pilot hole.
  2. Drill pilot hole along path following Drawings to these tolerances:
    - a Vertical alignment plus or minus 0.5 foot. Vertical path of the pilot hole must not establish new high points not shown on the drawings.
    - b Horizontal alignment plus or minus 1.0 foot.
  3. Include electronic monitoring of the horizontal and vertical drilling head location. Obtain an accuracy range within 1 inch of actual position of the pipeline. Record position readings at a maximum of 20 foot intervals.
  4. At completion of pilot hole drilling, furnish Engineer tabulations of horizontal and vertical alignment.
- D. Dewatering: Provide and maintain a dewatering system of sufficient capacity to remove water when encountered.
- E. Maintain close observation to detect if settlement or displacement of surface and any adjacent facilities. Notify Engineer immediately if settlement or displacement is detected.
- F. Drilling Operations:
  1. Maintain drilling fluid in bore hole to increase stability of the surrounding soil.
  2. Dispose of drilling fluid and other spoils at a location following laws, ordinances, rules and regulations.
  3. Provide clean water for drilling, at no cost to the owner.
  4. Exercise caution including, but not limited to locating utilities, drilling test pits to observe drill stems or reamer assembly to clear other existing utilities at necessary locations.

### 3.3 INSTALLATION

- A. Provide a swivel to reaming assembly and pull section of pipe to minimize torsional stress on pull section after drilling pilot hole.
- B. Hold reaming diameter to 1.5 times the outside diameter of the pipe being installed.
- C. Pull detection wire along with pipe installation.
- D. Engineer may order test pits to verify horizontal and vertical alignment if the installation is not in compliance with the contract documents.
- E. Contractor will replace portions of the pipeline not in compliance with the Contract Documents at Engineers direction and at no additional cost to the owner.

***END OF SECTION***

**SECTION 02330– DISINFECTION OF WATER SYSTEM****PART 1. GENERAL**

## 1.1 DESCRIPTION

A. Work consists of all required procedures necessary to disinfect water systems

## 1.2 SCOPE OF WORK:

A. Provide all labor, materials and equipment necessary for disinfection of the water system as shown on the drawings and specified herein.

B. Schedule work with other contractors working on site.

**PART 2. PRODUCTS**

2.1 MATERIALS for disinfecting the water system shall conform to AWWA C651 in order to attain the necessary results.

2.2 WATER for disinfection and flushing shall be provided by the Owner. Contractor shall give notice to Owner, coordinate and kept track of approximate amount of water used.

**PART 3. EXECUTION**

3.1 PIPELINE DISINFECTION. Before being opened to service, newly laid pipe shall be flushed, disinfected and re-flushed. The introduction of water into new extensions shall be planned carefully to prevent backflow into any portion of the existing system. Disinfection of new pipelines shall consist of: introducing into the lines a chlorinated solution to obtain a chlorine residual not less than specified in the filled pipeline; provide a contact period of not less than the specified hours; and free chlorine residual, at the end of contact period. Following chlorination, all treated water shall be flushed from the system. Refer to Appendix D of Kansas Department of Health and Environment (KDHE), *Policies, General Considerations and Design Requirements for Public Water Supply Systems in Kansas*, 2008 edition.

3.2 RECORD OF DISINFECTION. Provide OWNER with a written record of dates of disinfection, disinfectant used and procedure used.

3.3 BACTERIOLOGICAL TESTING. Bacteriological testing shall be required for this project and done on all the new water mains in accordance with Appendix D of Kansas Department of Health and Environment (KDHE), *Policies, General Considerations and Design Requirements for Public Water Supply Systems in Kansas*, 2008 edition.

**END OF SECTION**

**SECTION 02340– VALVES AND APPURTENANCES****PART 1. GENERAL****1.1 SECTION INCLUDES:**

- A. Valves.
- B. Hydrants.
- C. Valve accessories.

**1.2 REFERENCES**

- A. American National Standard Institute (ANSI), Latest Edition.
- B. American Society of Mechanical Engineers (ASME), Latest Edition.
- C. American Society of Testing Materials (ASTM), Latest Edition
- D. American Water Works Association (AWWA) Standards, Latest Edition.
- E. Building Officials and Code Administrators (BOCA) International, Inc., Latest Edition.
- F. Factory Mutual (FM), Latest Edition.
- G. International Association of Plumbing and Mechanical Officials (IAPMO), Latest Edition.
- H. Kansas Department of Health and Environment (KDHE), Policies, General Considerations and Design Requirements for Public Water Supply Systems in Kansas, 2008.
- I. Underwriters Laboratories (UL) Incorporated, Latest Edition.

**1.3 SUBMITTALS:**

- A. Submit under provisions of Section 01600.
  - 1. Product Data and shop drawings:
    - a. Gate Valve:
      - 1) Catalog cut and general bulletins, describing complete apparatus including operating principles and fundamentals.
      - 2) Materials of construction.
      - 3) Proof of design in accordance with ANSI/AWWA C509.
      - 4) Operation, Maintenance and Installation Manual.
    - b. Insertion Valve:
      - 1) Catalog cut and general bulletins, describing complete apparatus including operating principles and fundamentals.
      - 2) Materials of construction.
      - 3) Proof of design in accordance with specified ANSI/AWWA C509.
      - 4) Operation, Maintenance and Installation Manual.
    - c. Corporation Stop:
      - 1) Catalog cut and general bulletins, describing complete apparatus including operating principles and fundamentals.



- 2) Materials of construction.
- d Fire Hydrants:
  - 1) Catalog cut and general bulletins describing complete apparatus including operating principles and fundamentals.
  - 2) Materials of construction.
  - 3) Operation, Maintenance and Installation Manual.
- e Tapping Sleeves:
  - 1) Catalog cut and general bulletins describing complete apparatus including operating principles and fundamentals.
  - 2) Materials of construction.
  - 3) Operation, Maintenance and Installation Manual.
- f Service Saddles:
  - 1) Catalog cut and general bulletins describing complete apparatus including operating principles and fundamentals.
  - 2) Materials of construction.
- g Valve Box Ring and Cover:
  - 1) Catalog cut and general bulletins describing complete apparatus including operating principles and fundamentals.
  - 2) Materials of construction.

2. Manufacturer's Instructions: Provide instructions for installation for all valves

- B. Submit under provisions of Section 01600.
  - 1. Manufacturer's Field Reports: As noted within section.

#### 1.4 PROJECT RECORDS:

- A. Submit record documents under provision of Section 01700.
- B. Accurately record exact location of all buried valves.

#### 1.5 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provision of Section 01700

#### 1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable plumbing code.

#### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and protect products under provisions of section 01600.

## **PART 2. PRODUCTS**

### 2.1 VALVES

- A. General:
  - 1. Same size as pipe in which installed, unless noted otherwise on drawings.
  - 2. Manufacturer's name of initial and working pressure case on valve body.
  - 3. Open when turned counterclockwise.

4. Factory tested to double working pressure.
  5. Buried Service: Mechanical joint conforming to ANSI/AWWA C111/A21.11, unless noted otherwise on Drawings.
- B. Gate Valves:
1. Mechanical joint, resilient wedge-type gate valve. Gate valves on fire hydrant assemblies shall have a flanged outlet connection suitable for attachment to the fire hydrant inlet connection.
  2. Provide mechanical joint ends which comply with ANSI/AWWA C111 standard. Provide flanged end dimensions and drilling which comply with ANSI B16.1, Class 125.
  3. Provide mechanical joint gasket for PVC listed above.
  4. Cast iron edge symmetrical and fully encapsulated with molded rubber with no exposed iron.
  5. Non-rising, bronze stem per ASTM B138.
  6. 2-inch square AWWA operating nut.
  7. Triple rubber O-rings on stem. Top two O-rings can be replaced with valve fully open and under pressure.
  8. Suitable for 250 psi maximum working pressure.
  9. Manufactured and tested per ANSI/AWWA C509.
  10. NSF-61 certified.
  11. All internal and external exposed iron surfaces of valve body and bonnet shall have an epoxy coating.
  12. Manufacturer:
    - a Mueller Co., Decatur IL.
    - b Substitutions: No substitutions.
  13. Model: A-2360
- C. Corporation Stop:
1. 2-inch and smaller:
    - a Conform to:
      - 1) Manufactured and tested per ANSI/AWWA C800.
      - 2) AWWA CC/NPT thread inlet for connection to service saddle. Inlet connection to be compatible with service saddle.
      - 3) Connection to service line should utilize a Pack Joint Nut compressing a Buna-N beveled gasket to make a water-tight seal.
      - 4) Connection to HDPE pipe shall utilize a locking device, split clamp, which is drawn down securely on the tubing or pipe by tightening a stainless steel screw.
      - 5) Designed to connect to high density polyethylene tubing.
      - 6) Maximum working pressure of 300 psi.
    - b ¾" Services, Model F1000-3NL CCXPJ CTS by Ford Meter Box Company, Inc, Wabash, IN.
    - c 1" Services, Model F1000-4NL CCXPJ CTS by Ford Meter Box Company, Inc, Wabash, IN.
    - d Substitutions: None

## 2.2 HYDRANTS

### A. Fire Hydrant:

1. Type: Dry Barrel.
2. Conform to ANSI/AWWA C502.
3. Maximum working pressure: 250 psi.
4. Provide with break-off feature, should be on the traffic breakaway type and allow 360° rotation of the fire hydrant to position the pumper nozzle in the desired direction.
5. Interior of the shoe shall be coated with HP epoxy.
6. Inlet:
  - a Mechanical joint.
  - b Diameter: 6 inches to match size of associated line.
7. Provide two 2-1/2 inch hose nozzles and one 5-1/4 inch pumper nozzle with caps and chains for all hydrants. Hydrant caps will have inside gaskets.
8. Cast on top of hydrant an arrow and the work "OPEN" in relief indicating the direction of turning to open the hydrant.
9. Warranty: 10 year limited warranty on material and workmanship.
10. Model/Manufacturers:
  - 1) Centurion 250 A-423 by Mueller Co., Decatur, IL.
  - 2) No Substitutions.

## 2.3 ACCESSORIES

### A. Tapping Sleeves:

1. Shall conform to ANSI/NSF 61.
2. Shall have ¾" NPT brass test plug.
3. Materials of construction:
  - a Body: Stainless steel.is project shall be ductile iron.
  - b Gasket: Nitrile (Buna-N) ASTM D2000 BA 508
  - c Bolts, Nuts and Washers: Stainless Steel.
4. Flange: AWWA C207 Class D, ANSI 50 pound drilling.
5. Finish: All internal and external exposed iron surfaces of fitting shall have epoxy coating.
6. Manufacturer:
  - a Ford Meter Box Company, Inc., Wabash IN.
  - b Mueller Company, Decatur, IL
  - c Romac Industries, Bothell, WA.
  - d Substitutions: Under provisions of Section 01600.

### B. Service Saddles:

1. Utilize to tap into piping where shown on Drawing.
2. Shall conform to ANSI/NSF 61.
3. Greater than ½ inch tap.
  - a Conform to:
    - 1) Ductile iron body per ASTM A536.
    - 2) Stainless steel band and hardware.
    - 3) Buna-N rubber ASTM-D2000 rubber gasket.
    - 4) Saddle to be epoxy coated inside and out.
    - 5) Heavy threaded outlet with CC/NPT Thread for connection to corporation stops.
4. Model/Manufacturer
  - a Model S90 by Ford Meter Box Company, Inc., Wabash, IN.
  - b Substitutions: None

- C. Meter Setter
  - 1. Utilize for installation of meter in meter pit for connecting service line.
  - 2. Model/Manufacturer
    - a ¾" Services, Model VB71-15W-4433 by Ford Meter Box Company, Inc, Wabash, IN.
    - b 1" Services, Model VB74-18W-4444 by Ford Meter Box Company, Inc, Wabash, IN.
  
- D. Meter Pit and Cover
  - 1. Meter pit shall be 36" tall poly pipe. 18" Dia for ¾" services and 24" dia. for 1".
  - 2. Cover shall adequately fit over pit.
  - 3. Cover shall be removable cast iron.
  
- E. Valve Box Ring and Cover:
  - 1. Valve box shall be 6-inch PVC for not traffic areas or 6" cast iron for traffic areas.
  - 2. Valve box ring and cover shall adequately fit over valve box.
  - 3. Valve box cover shall be removable iron cast.
  - 4. Valve box cover shall be marked "WATER".
  
- F. Valve Wrenches:
  - 1. One operating wrench shall be supplied for each type of valve supplied.
  - 2. Shall be designed to fit opening nuts on valves.

### **PART 3. EXECUTION**

#### **3.1 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.

***END OF SECTION***

**SECTION 02500 – PORTLAND CEMENT CONCRETE PAVEMENT**

**PART 1. GENERAL**

1.1 SECTION INCLUDES:

- A. Concrete pavement for streets and entrances.
- B. Concrete sidewalks and exterior slabs.
- C. Concrete Pavement Patching

1.2 SCOPE OF WORK

- A. Provide all labor, materials and equipment necessary for performing all concrete paving as shown on the drawings and specified herein.
- B. Work shall conform to Division Three – Concrete, unless otherwise specified in this section.
- C. All paving work shall conform with ADA (Americans with Disabilities Act) standards and Local City Standard Specifications, unless otherwise specified in this section.
- D. Schedule work with other contractors working on site.

1.3 QUALITY ASSURANCE:

- A. The CONTRACTOR will be responsible for testing of concrete work. Contractor shall provide material for testing and cooperate with the individuals providing testing.

1.4 SUBMITTALS:

- A. Submit product data and manufacturer's instructions for:
  - 1. Curing compounds.
  - 2. Form facing materials.
  - 3. Form release agents.
  - 4. Proprietary cleaning agents.
  - 5. Surface retarders.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is saturated or frozen.

**PART 2. PRODUCTS**

2.1 CONCRETE:

- A. See Division Three – Concrete

B. Concrete provided shall meet the following criteria:

1. Compressive Strength: min 4,000 p.s.i. at 28 days.
2. Slump: Three (3") inches maximum for pavement
3. Air Entrainment: 6.5% plus/minus 1.5%.

C. Mix and deliver in accordance with ASTM C94

## 2.2 CONCRETE PAVEMENT PATCHING

A. Patching concrete shall have the following characteristics:

1. Cement – Minimum of 750 lbs./cu.yd. of either Type I or Type II cement that complies with Division Three – Concrete.
2. Maximum slump at time of placement is 2.5 inches.
3. Concrete shall have a minimum cure time of 24 hours.

## 2.3 REINFORCEMENT

A. Reinforcing Steel and Wire Fabric: Type specified in Section 03100

## 2.4 JOINT SEALERS:

A. See Section 07800 – JOINT SEALERS

## 2.5 GRAVEL BASE COURSE:

A. AB-3 crushed rock in accordance with KDOT Standard Specifications, or acceptable equivalent.

# **PART 3. EXECUTION**

## 3.1 PREPARATION:

- A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.
- B. Verify elevations and gradients of the base are correct.
- C. Remove loose and organic material.
- D. Moisten base to minimize absorption of water from fresh concrete.
- E. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

## 3.2 FLY ASH MODIFIED SUBGRADE

A. See Section 02710

## 3.3 FORMING:

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Place expansion joints at approximately 25 foot intervals (to match joint pattern on plan), unless otherwise specified and at major directional changes/intersections of paving. Secure filler material to formwork, in straight lines and vertical position. Place joint filler between paving and other appurtenances. Recess top of filler  $\frac{3}{4}$ ", unless otherwise specified, to allow for joint sealant.
- C. Construction joints shall receive formed keyways.

#### 3.4 REINFORCEMENT:

- A. Place pavement reinforcement at the locations shown in the Contract Documents.

#### 3.5 PLACEMENT

- A. Place concrete as specified in Section 03100 – Portland Cement Concrete.
- B. Ensure drainage across pavement surface.
- C. Joint concrete as shown on the drawings.

#### 3.6 JOINT SEALING

- A. Apply joint sealant to all joints after curing. Prevent spillage and excess sealant. Maintain top of sealant at  $\frac{1}{4}$ " below surface, unless otherwise specified. See Section 07800-Joint Sealers.

#### 3.7 FINISHING:

- A. Sidewalk and Pedestrian Pavement Surfaces: Light rake or heavy broom finish with radius joint edges and joints. Do not trowel edges. Produce slip-resistant finish in accordance with the ADA.
- B. Curb & Gutter, Entrance and Alley Pavement: Light broom or burlap bag finish.
- C. Street Pavement: Use a light broom as soon as all surface moisture has disappeared and while the concrete is still plastic enough to make a granular surface possible. Direction of texturing shall be perpendicular to the direction of travel.
- D. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.
- E. Protect finish from damage due to premature drying, excessive hot or cold temperatures, and mechanical damage and from cosmetic damage resulting from discoloration.

#### 3.8 TOLERANCES:

- A. Maximum variation of surface flatness: 3/8-inch in 10 ft.

B. Finish elevations shall be within ½-inch of plan elevations.

3.9 TESTING

A. Test in accordance with Section 03100 – Portland Cement Concrete.

B. Frequency:

1. Slump, Unit Weight, & Air Content shall be taken as often as necessary to control the product or at least once per half day's pour for pours exceeding 5 cubic yards.
2. At least one set of cylinders shall be cast on the initial pour and at least one per 1,000 square yards.

***END OF SECTION***



**SECTION 02900 – SEEDING****PART 1. GENERAL**

## 1.1 SECTION INCLUDES:

- A. Seed bed preparation.
- B. Seeding, fertilizing and mulching

## 1.2 SCOPE OF WORK

- A. Provide all labor, materials and equipment necessary for performing all seeding and related work.
- B. Seed all areas disturbed by construction and all other areas indicated on the Drawings.
- C. The use of all fertilizers and pesticides shall be in strict conformance with all applicable local, state, and federal laws and regulations.

## 1.3 SCHEDULE:

- A. Cool Season Turf Grass: Perform all seeding between March 1 and May 1 for Spring planting and between September 1 and October 15 for Fall planting. Seeding at other times shall not be performed without prior authorization of the Engineer.
- B. The Contractor may, at his option, plant temporary grass stand in an effort to control erosion until permanent grass is established.
- C. Coordinate with all other contractors performing work at jobsite.

## 1.4 SUBMITTALS:

- A. Submit certifications on seed analysis, purity and germination.
- B. Submit manufacturer's certifications on chemical analysis of fertilizers and soil amendments.

**PART 2. PRODUCTS**

## 2.1 SEED:

- A. All seed shall be labeled in accordance with the U.S. Department of Agriculture rules and regulations under the Federal Seed Act in effect on the date of the Invitation to Bid on this project, and shall comply with the State Seed Laws of the State of Kansas. Grass seed shall be contained in bags and shall be tagged to show testing date, purity and germination at time of test. Seed, which has become wet, moldy, or otherwise damaged in storage or transit will not be acceptable.

- B. Seed shall have minimum 90% pure, live grass seed with not more than ½% pernicious weed content.
- C. Grass seed shall be K-31 Tall Fescue, or approved equal with a minimum seeding rate of 10 lbs. (pure live seed) per 1,000 sq.ft.
- D. Temporary Grass: Annual Ryegrass with a minimum purity of 90% and less than ½% pernicious weed content sown at a rate of ½ lb. (pure live seed) per 1,000 sq.ft.

## 2.2 FERTILIZER:

- A. Fertilizer shall be furnished by a commercial carrier of available nutrients and shall comply with Kansas State Fertilizer Laws. It shall be uniform in composition, dry, free-flowing and in condition for application with suitable application equipment.
- B. Cool Season Turf Grass: Fertilizer shall be a start fertilizer, 12-12-12; or acceptable equivalent. Apply at a rate of 6 lbs. per 1,000 sq.ft.
- C. Various fertilizers may be blended or applied in combination to obtain the specified application rates of the required nutrients.

## 2.3 MULCH:

- A. Material for mulch shall consist of native hay, preferable prairie. Hay shall not contain Sericea Lespedeza, Multiflora Rose or any noxious weed identified by the Kansas Department of Agriculture. Hay shall be labeled "meets the North American Weed Free Forage Standards" and labels shall be turned into the owner/inspector.
- B. Mulch shall be spread at a rate of 100 lbs per 1,000 sq.ft.

## PART 3. EXECUTION

### 3.1 SEED BED PREPARATION:

- A. Areas to be seeded shall contain a minimum of four inches of good quality topsoil free of rocks, sticks, roots, broken glass, debris and toxic substances.
- B. Till or disk topsoil. Moisten as required to maintain soil workability and eliminate excessive, large clods.
- C. Fine grade by raking, rolling and/or dragging to ensure drainage and create smooth, uniformly contoured surface.
- D. Finish grades after planting and rolling shall be between ¼" and ¾" below top of adjacent curbs, pavements and landscape edging, unless otherwise indicated or directed by the Engineer.
- E. Care shall be exercised throughout seeding operations to maintain the required finish grades.

### 3.2 FERTILIZER:

- A. Uniformly apply fertilizer and mix into upper one to two inches of topsoil.

### 3.3 SEEDING:

- A. Uniformly apply seed and incorporate into top ¼" of topsoil by drilling, broadcasting and harrowing, or another acceptable method.
- B. When seeding mixtures or blends, each variety shall be sown separately unless the seeds are of similar size and mass and are specified to be sown at the same rates. If different rates are specified, concurrent planting of different species or varieties will only be permitted if the drill is equipped with separate hoppers designed to simultaneously sow different seed at the respective individual rates.
- C. No broadcasting shall be performed during windy conditions.
- D. Seed shall be equally sown in two directions at right angles.
- E. Seeded areas shall be firmed by rolling.

### 3.4 MULCHING:

- A. Uniformly distribute mulch as a continuous blanket.
- B. Anchor mulch by "crimping" or by applying an acceptable non-asphaltic tackifier.

### 3.5 ESTABLISHMENT

- A. Contractor shall be responsible for proper care of all seeded areas while turf is becoming established for a period of 60 days after seeding operations have been completed, unless the desired cover is established in a shorter period of time and Owner or representative agrees to shorten the responsibility period.
- B. Seeded areas requiring additional seed and fertilizer may be designated by the Owner or representative during the establishment period. These areas shall be reseeded and refertilized during the next time of seeding by the Contractor at no additional cost to the Owner. The rates of application and seedbed preparation shall be the same as specified hereinbefore this section.

***END OF SECTION***

## **SECTION 03100 – PORTLAND CEMENT CONCRETE**

### **PART 1. GENERAL**

#### 1.1 SECTION INCLUDES:

- A. Formwork, reinforcement, accessories, admixtures, cast-in-place concrete, finishing, and curing.

#### 1.2 SCOPE OF WORK

- A. Provide all labor, materials and equipment necessary for performing all concrete work as shown on the drawings and specified herein.
- B. All concrete work shall conform to ADA (Americans with Disabilities Act) standards and the Local Authorities Standard Specifications, unless otherwise specified in this section.
- C. Schedule work with other contractors working on site.

#### 1.3 QUALITY ASSURANCE:

- A. The OWNER will be responsible for testing of concrete work. Contractor shall provide additional concrete to be tested and cooperate with the individuals providing testing for the OWNER.
- B. Perform work in accordance with ACI 301, except as modified by these contract documents.

#### 1.4 SUBMITTALS:

- A. Submit concrete mix designs with certifications at least 15 days prior to start of Work.
- B. Product data and manufacturers instruction and recommendations shall be submitted for any admixtures used and curing/sealing compounds.
- C. Aggregate Certification Results

#### 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Conform to ACI 305 during hot weather.
- B. Conform to ACI 306 during cold weather.

### **PART 2. PRODUCTS**

#### 2.1 FORMS:

- A. Form facing material shall be of a non-porous surface such as Prefabricated Steel, Plastic, high-density overlaid plywood with watertight joint seals, or Fibrous Glass Reinforced Resin Type: matched, tight fitting, stiffened to support weight of concrete.
- B. Form Ties: If required, use fiberglass rods tinted to match concrete.
- C. Form Release Agent: Colorless mineral oil which will not stain concrete or absorb moisture non-toxic within thirty days in liquid containing structures.
- D. Corners: Filleted Chamfered,  $\frac{3}{4}$ -inch x  $\frac{3}{4}$ -inch; maximum possible lengths.
- E. Formed Construction Joints for Slab-on Grade: Galvanized steel or extruded plastic, tongue and groove type profile, knockout holes to receive doweling.
- F. Slab Edge Joint Filler: ASTM D1751, premolded asphaltic board, 1/2 –inch thick.
- G. Non-Asphaltic Joint Fillers: ASTM D1752, Type 1.
- H. Backer Rod (if required): Heat resistant to withstand high temperatures associated with hot sealants. Compatible with silicon-based cold sealers, when applicable. Backer rod shall be Carter-Waters Cera-Rod, or approved equal.

## 2.2 REINFORCEMENT:

- A. Reinforcing Steel: ASTM A615, 60 ksi yield grade; deformed billet steel bars, epoxy coated.
- B. Welded Steel Wire Fabric: ASTM A185, Plain Type in flat sheets or coiled rolls.
- C. Dowels: ASTM A615, 40 ksi yield grade, epoxy coated.
- D. Epoxy coating shall comply with ASTM A 775. Fabricators must comply with the provisions of ASTM D3963, "Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars."
- E. Accessories:
  - 1. Tie Wire: Minimum 16 gage annealed type.
  - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom.

## 2.3 CEMENT:

- A. Shall meet ASTM C150, Type 1 – Normal Portland, grey color.
- B. If cement becomes partially set or contains lumps of caked cement, it shall be rejected. Cement salvaged from used bags shall not be used.

- C. Only cements containing less than 0.6% equivalent alkali or cements that can demonstrate a positive reduction in the expansion created by alkali-silica reactions shall be used.

2.4 AGGREGATES:

A. Fine Aggregates:

- 1. Shall conform to the requirements of ASTM C 33. Gradation shall meet the requirements of Table 1 when tested in accordance with ASTM C 136, except as may otherwise be qualified under Section 6 of ASTM C 33.

<b>TABLE 1 GRADATION FOR FINE AGGREGATE (KDOT Type FA-A)</b>	
Sieve Designation (Square Openings)	Percentage by Weight Passing Sieves
1 in.	100
No. 4	90 – 100
No. 8	73 – 100
No. 16	45 – 85
No. 30	23-60
No. 50	7 – 30
No. 100	0 – 10

- 2. The amount of deleterious material in the fine aggregate shall not exceed the following limits by mass:

<b>Deleterious material</b>	<b>Material Percentage by Mass</b>
Clay Lumps and friable particles ASTM C142	1.0
Material finer than 0.075mm (No. 200 sieve) ASTM C117	2.0

B. Coarse Aggregates.

- 1. Coarse aggregate shall conform to the requirements of ASTM C 33. Gradation, within the separated size groups, shall meet the requirements of Table 2 when tested in accordance with ASTM C 136. When the nominal maximum size of the aggregate is greater than 1 inch, the aggregates shall be furnished in two size groups.

Aggregates delivered to the mixer shall consist of crushed stone, crushed or uncrushed gravel, air-cooled blast furnace slag, crushed recycled concrete pavement, or a combination thereof. The aggregate shall be composed of clean, hard, uncoated particles and shall meet the requirements for deleterious substances contained in ASTM C 33, Class 4S. Dust and other coating shall be removed from the aggregates by washing. The aggregate in any size group shall not contain more than 8 percent by weight of flat or elongated pieces when

tested in accordance with ASTM D 4791 and ASTM C 666, Resistance of Concrete to Rapid freezing and Thawing. A flat or elongated particle is one having a ratio between the maximum and the minimum dimensions of a circumscribing rectangular prism exceeding 5 to 1.

The percentage of wear shall be no more than 40% when tested in accordance with ASTM C 131 or ASTM C 535.

Sieve Designation (Square Openings)	Percentage by Weight Passing Sieves
1-½"	100
1"	90 – 100
¾"	65 – 88
⅜"	15 – 50
No. 4	0 – 15
No. 20	0 – 5
No. 200	0 – 3

#### C. Mixed Aggregates

1. Shall meet the requirements of MA-2 as described in Section 1100 of the KDOT Standard Specifications.

#### D. *Aggregate susceptibility to Disintegration (D) Cracking.* Aggregates that have a history of D-cracking shall not be used. As part of the approval of the mixture design, the Contractor shall submit a current written certification that the aggregate does not have a history of D-Cracking and that the aggregate meets the specified state specifications for use in Portland Cement Concrete (PCC) pavement for use on interstate highways.

1. Other sources of crushed stone aggregate shall be approved if the durability factor as determined by ASTM C 666 is greater than or equal to 95 and all other quality test requirements within these specifications are fulfilled.
2. Crushed Stone Aggregate from Kansas: Aggregate shall meet KDOT Division 1100 requirements. Coarse aggregate shall be certified as KOT Class 1 aggregate as outlined in Section 1102.2.
3. Crushed Stone Aggregate from Nebraska: Aggregate shall meet the quality test requirements of these specifications and meet the Nebraska Department of Roads (NDOR) Section 1006 requirements.

## 2.5 WATER

- A. Water used in mixing or curing shall be clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product. Water will be tested in accordance with the requirements of AASHTO T 26. Water known to be of potable quality may be used without testing.

## 2.6 ACCESSORIES

- A. Bonding Agent: Polymer resin emulsion.
- B. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.
- C. Make provisions for installation of inserts, accessories, anchors, and sleeves.
- D. Cleaning Agents: Use products known to be compatible with colored concrete.

## 2.7 ADMIXTURES:

- A. Air Entrainment Admixture: Provide material that complies with AASHTO M 154 and ASTM C260
- B. Water Reducing, Set Retarding, and Accelerating Admixtures shall comply with ASTM C 494.
- C. Plasticizing Admixtures shall comply with ASTM C 1017.
- D. Admixtures: Do not use Calcium Chloride Admixtures.

## 2.8 COVER MATERIAL FOR CURING

- A. Curing materials shall conform to one of the following specifications:
  - 1. Liquid membrane-forming compounds for curing concrete shall conform to the requirements of ASTM C309, Type 2, Class B, or Class A if wax base only.
  - 2. White polyethylene film for curing concrete shall conform to the requirements of ASTM C 171.
  - 3. White burlap-polyethylene sheeting for curing concrete shall conform to the requirements of ASTM C 171
  - 4. Waterproof paper for curing concrete shall conform to the requirements of ASTM C 171.

## 2.9 CONCRETE MIX:

- A. Mix and deliver concrete in accordance with ASTM C94.
- B. Select proportions for normal weight concrete in accordance with ASTM C94.
- C. Concrete Properties:
  - 1. Compressive Strength: 4000 psi @ 28 days.
  - 2. Slump: 3 ½ inches maximum.
  - 3. Air entrainment: 4-7%



- D. Use of calcium chloride is prohibited.
- E. Do not retemper mix by adding water at construction site.
- F. Use accelerating admixture in cold weather only when approved by Engineer. Use of admixture will not relax cold weather placement requirements.
- G. Use set retarding admixtures during hot weather only when approved by Engineer.

### **PART 3. EXECUTION**

#### **3.1 PREPARATION:**

- A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.
- B. Verify elevations and gradients of the base are correct.
- C. Moisten base to minimize absorption of water from fresh concrete.
- D. Notify Engineer minimum 24 hours prior to commencement of concreting operations.
- E. Beginning of installation means acceptance of existing conditions.

#### **3.2 FORMWORK ERECTION:**

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.
- B. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- C. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
- D. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- E. Align joints and make watertight. Keep form joints to a minimum.
- F. Provide fillet and chamfer strips on external corners of beams, columns, and walls.  $\frac{3}{4}$ " x  $\frac{3}{4}$ ", unless otherwise noted on the drawings.
- G. Apply form release agent on formwork in accordance with manufacturer's recommendations, prior to placing of accessories and reinforcement
- H. Do not apply form release agent where concrete surfaces will receive applied coverings, which are effected by agent.
- I. Clean forms as erection proceeds, to remove foreign matter within forms.

J. Forms shall be set plumb, properly aligned, to provide smooth, even layout.

### 3.3 INSERTS, EMBEDDED PARTS, AND OPENINGS:

- A. Provide formed openings where required for items to be embedded in passing through concrete work.
- B. Locate and set in place items which will be cast directly into concrete.
- C. Coordinate with work of other sections in forming and placing openings, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.
- D. Install accessories in accordance with manufacturer's instructions, straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- E. Install void forms in accordance with manufacturer's instructions. Protect forms from moisture before concrete placement and from crushing during concreting operations.

### 3.4 REINFORCEMENT PLACEMENT:

- A. Place, support and secured reinforcement against displacement. Do not deviate from require position.
- B. Accommodate placement of formed openings.
- C. Ensure reinforcement is clean, free of loose scale, dirt, or other foreign coatings.

### 3.5 CONCRETE PLACEMENT;

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- B. Verify requirements for concrete cover over reinforcement.
- C. Place concrete in accordance with ACI 301, 302, and 304.
- D. Separate slabs on grade from vertical surfaces with ¼-inch thick joint filler.
- E. Extend joint filler from bottom of slab to within ½-inch of finished slab surface.
- F. Place concrete continuously between predetermined construction joints.
- G. Do not interrupt successive placement; do not permit cold joints to occur.
- H. Where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrink grout.
- I. Screed floors and slabs-on-grade uniformly, maintaining surface flatness of maximum ¼ inch in 10 ft. to prevent unevenness and formation of pools.

- J. Consolidate concrete as required by mechanical vibrator supplemented by rodding, spading or tamping. Do not vibrate forms or reinforcement. Do not over-vibrate, segregate concrete mix, or transport concrete in forms by use of vibrator.

### 3.6 CONCRETE FINISHING:

- A. Provide formed concrete surfaces with finish in accordance with ACI 301.
- B. Grout voids left after form removal where acceptable to Engineer.
- C. Minor variations in appearance of colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

### 3.7 CURING:

- A. Cure and protect concrete in accordance with ACI 301.
- B. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical damage.
- C. Maintain concrete between 65 and 85 degrees F during curing.
- D. Apply curing compound in accordance with the manufacturer's recommendations. For colored concrete apply curing compound at consistent time for each pour to maintain close color consistency.
- E. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- F. Prior to sealant application, clean all joints.
- G. Apply sealants to all joints after cleaning. Avoid overfilling joints or spilling sealant on surrounding surfacing. Any spillage shall be cleaned up immediately.

### 3.8 FORM REMOVAL:

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

### 3.9 TESTING

- A. Compressive strength shall be tested in accordance with ASTM C31 and ASTM C39. Four cylinders shall be taken per sample. One cylinder shall be tested at 7 days, two at 28 days, and one retained for later testing if necessary.

- B. Frequency:
  - 1. Structures: Test concrete for each days pour exceeding 5 cu.yds. If pours exceed 50 cu.yds, one additional sample shall be taken per 50 cu.yds. poured.
  - 2. Pavement: see section 02500
- C. For each sample taken, a slump test shall be run in accordance with ASTM C143.
- D. For each sample taken, air content shall be measured in accordance with ASTM C231
- E. For each sample taken, unit weight shall be measured in accordance with ASTM C138
- F. Slump may be taken periodically to measure consistency.
- G. Remove and replace all defective concrete.

***END OF SECTION***