

City of Scottsbluff, Nebraska

Tuesday, February 18, 2020

Regular Meeting

Item Consent2

Council to approve the bid specifications for 23 Club Improvements 2020 and authorize the city clerk to advertise for bids to be received by March 11, 2020 at 10:00 a.m.

Staff Contact: City Council

23 Club Improvements 2020

for the
City of Scottsbluff

Contract 002-169-18

ADVERTISEMENT FOR BIDS

1. Sealed Bids for the construction of 23 Club Improvements 2020 shall be received by the City of Scottsbluff at the City office 2525 Circle Drive, Scottsbluff, NE 69361 on or before **March 11, 2020; 10:00 a.m. MST** which time the Bids will be publicly opened and read. Any Bids received after the above specified time will be immediately returned to the Bidder unopened.

The site of the work is located 29th Street and 2nd Avenue in Scottsbluff.

The major items of work and approximate quantities under this contract are as follows:

Construction of a new concessions building, concrete paving, concrete stadium seating, dugouts, awnings, and other utilities and structures.

2. The Contract Documents containing the detailed Drawings and Specifications for the construction of the work, together with the proposed construction contract, may be seen at the office of the Consulting Engineers, Baker & Associates, 120 East 16th Street-Suite A, Scottsbluff, NE 69361, (308)632-3123. Electronic copy (CD) may be obtained for \$15.00. Hard copies may be obtained for a fee of \$80 (non-refundable). Plans and specifications shipped ground will be charged an extra \$15.
3. Bid security in the amount of five percent (5%) unqualified of the amount of maximum Bid price shall be required with each Bid.
4. No Bidder may withdraw his Bid within 60 days after the actual date of the opening thereof.
5. Right is reserved in the interest of the Owner to reject any or all Bids and to waive any informality in the Bids received.

Kimberley Wright, City Clerk
FOR THE CITY OF SCOTTSBLUFF

Publish 3 times February 21 & 28, March 6, 2020
1 Affidavit of Publication

CONTRACT DOCUMENTS

FOR THE

23 Club Improvements

2020

for the

City of Scottsbluff, Nebraska

CONTRACT 002-169-18

Prepared by:



120 East 16th Street, Suite A
Scottsbluff, Nebraska 69361

February 2020

23 Club Improvements 2020
for the
City of Scottsbluff

CONTRACT # 002-168-17

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FOR THE CITY OF SCOTTSBLUFF

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

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

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

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder shall be prepared to submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) evidence of Bidder's authority to do business in the state where the Project is located.
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

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

4.01 *Site and Other Areas*

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

4.02 *Existing Site Conditions*

- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
1. The Supplementary Conditions identify:
- a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.

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

The Baseline Conditions in the GBR are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the GBR, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are baselined.

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

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

4.03 *Site Visit and Testing by Bidders*

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

4.04 *Owner's Safety Program*

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

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

- 6.01 No pre-bid conference is planned at this time. However prospective bidders are encouraged to contact the engineer and arrange for access to the site or to request further information as necessary.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than three (3) days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five (5) percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

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

ARTICLE 10 – LIQUIDATED DAMAGES

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

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.03 If requested by Owner, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the major portions of the Work.

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

- 12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

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

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

ARTICLE 14 – BASIS OF BID

- 14.01 The Basis of Bid shall be defined by the Bid Form C-410.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 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 other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to the Owner as listed in the Advertisement for Bids.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

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

ARTICLE 17 – OPENING OF BIDS

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

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

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

- B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner shall announce to all bidders a "Base Bid plus alternates" budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- 19.05 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 19.06 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

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

ARTICLE 21 – SIGNING OF AGREEMENT

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

ARTICLE 22 – SALES AND USE TAXES

- 22.01 The final determination of exempt status of Sales and Use Taxes lies with the State Department of Revenue. If applicable, the Owner will issue the Contractor the appropriate tax exemption certificates/appointments in accordance with local and state laws.

ARTICLE 23 – OUT-OF-STATE BIDDERS

- 23.01 It shall be the Bidder's responsibility to make himself aware of all applicable State laws and regulations governing out-of-state contractors.

END OF SECTION

DOCUMENT 00205 UTILITY COMPANIES

PART 1 Water & Sewer

City of Scottsbluff
(308) 630-0926
(308) 630-6258 - water

PART 2 Electrical

Nebraska Public Power District
515 1st Avenue
Scottsbluff, NE
(877) 275-6773

PART 3 Telephone, Cable TV and Fiber-optics:

Century Link
Location of Buried Cable
(800) 788-3600

Allo Communications
(308) 633-5000

Charter Digital Communications
Location of Buried Cable
(308) 635-3163

PART 4 Natural Gas:

Black Hills Energy
(800) 563-0012

PART 5 Digger's Hotline of Nebraska:

(800) 331-5666

END OF SECTION

**23 Club Baseball Complex
Improvements
for the
City of Scottsbluff**

Contract 002-169-18

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

CITY OF SCOTTSBLUFF, CITY OFFICES, 2525 CIRCLE DRIVE, SCOTTSBLUFF, NE 69361

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

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen (15) days after the date of Owner's Notice of Award.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

Addendum No.

Addendum, Date

_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

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

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

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

4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the prices (s) indicated on the bid pages following this Section.

ARTICLE 6 – TIME OF COMPLETION

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

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Required Bid security;
 - B. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids; and
 - C. Required Bidder Qualification Statement with supporting data (as applicable).

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

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

By:

[Signature] _____

[Printed name] _____

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

Attest:

[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Note: Security companies executing bonds must be on the Treasury Department's most current list (Circular 570 as amended) and they must be authorized to transact business in the state in which the work is to be performed.

EJCDC® C-410, Bid Form for Construction Contracts.

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Schedule A - Site Work & Utilities

- A-1 Including bonding, labor, materials, equipment, and incidentals necessary to mobilize equipment to and from the site, as specified, for the following lump sum price:**

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Mobilization	1	LS			

- A-2 Including furnishing and handling all labor, materials, equipment and incidentals necessary for the approval and maintenance of the Storm Water Pollution Prevention Plan, including silt fences, and other protection items, as required by NDEQ or local agency, as specified, for the following lump sum price:**

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Storm Water Pollution Prevention Plan	1	LS			

- A-3 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for any demolition and removal of existing structures, trees, shrubs, and unsuitable material from the site prior to installation of the proposed facilities, as specified, for the following lump sum price:**

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Site Demolition & Clearing	1	LS			

- A-4 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for grading the site to the elevations shown including hauling and placing of imported material, as specified, for the following lump sum price:**

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Site Grading	1	LS			

- A-5 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 2" polyethylene water service pipe, as specified, for the following unit price per each:**

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
2" Water Service, Polyethylene	320	LF			

- A-6 Including furnishing and handling all materials, equipment, labor, and incidentals necessary connection of sanitary sewer service lines, as specified, for the following unit price per each:**

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Sanitary Sewer Service Connection	1	EA			

- A-7 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 2" base course, as specified, for the following unit price per square yard:**

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Base Course - 2"	2010	SY			

A-8 Including furnishing and handling all labor, materials, equipment necessary to complete for the subgrade preparation and fine grading of areas under pavement as specified, for the following unit price per square yard:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Subgrade Preparation	2010	SY			

A-9 Including furnishing and handling all equipment, labor, and incidentals necessary for the installation of 5" PCC pavement, as specified, for the following unit price per square yard: (Concrete mix to be purchased and provided by owner)

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Pavement - 5" PCC - Install	935	SY			

A-10 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for the installation of 6" PCC pavement, as specified, for the following unit price per square yard: (Concrete mix to be purchased and provided by owner)

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Pavement - 6" PCC - Install	680	SY			

A-11 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 12" PVC Storm Sewer, as specified, for the following unit price per lineal foot:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Storm Sewer - 12" PVC	445	LF			

A-12 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 18" HDPE Storm Sewer, as specified, for the following unit price per lineal foot:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Storm Sewer - 18" HDPE	300	LF			

A-13 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for the installation of storm sewer area inlets, as specified, for the following unit price per each:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Storm Sewer - Area Inlet	23	EA			

A-14 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of hand rails as shown for stairways, stadium areas for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Hand Rails	1	LS			

A-15 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 6' chain-link fence, as specified, for the following unit price per lineal foot:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Fence - Chain-link, 6'	825	LF			

A-16 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 8' chain-link fence, as specified, for the following unit price per lineal foot:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Fence - Chain-link, 8'	352	LF			

A-17 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 10' chain-link fence, as specified, for the following unit price per lineal foot:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Fence - Chain-link, 10'	440	LF			

A-18 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of foul ball outfield poles as specified, for the following unit price per each:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Fence - Foul Ball Outfield Poles	8	EA			

A-19 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 12' chain-link gate, as specified, for the following unit price per lineal foot:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Fence - Chain-link Gate, 12'	4	LF			

A-20 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 18' high chain-link backstops as specified, for the following unit price per each:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Fencing - Backstops - 18'	1	EA			

A-21 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of 24' high chain-link backstops as specified, for the following unit price per each:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Fencing - Backstops - 24'	3	EA			

A-22 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of Benches in dugouts as specified.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Benches	24	EA			

Total Schedule A

\$ _____

Schedule B - Buildings & Structures

B-1 Including furnishing and handling all equipment, labor, and incidentals necessary for installation of the concessions building structure as specified.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Metal Building Erection - Concessions	1	LS			

B-2 Including furnishing and handling all equipment, labor, and incidentals necessary for installation of the Stadium Awning building structures as specified.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Metal Building Erection - Stadium Awnings	4	EA			

B-3 Including furnishing and handling all equipment, labor, and incidentals necessary for installation of the Dugout shade structures as specified.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Metal Building Erection - Dugouts	8	EA			

B-4 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete foundations as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Foundation - Concession Building	1	LS			

B-5 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete foundations as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Foundation - Stadium Awnings	4	LS			

B-6 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete foundations and floors as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Foundation & Floor - Dugouts	8	LS			

B-7 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete floor as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Floor - Concessions Building	1	LS			

B-8 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete seating areas as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete - Stadium Seating	1	LS			

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Ver.16

Bid Pages

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B-9 Including all labor, materials, equipment, and incidentals necessary for the construction and installation of a Flag Pole including foundation and appurtenances as specified for following lump sum price:					
Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Flag Pole	1	LS			

B-10 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of interior walls, ceilings, partions, counters, cabinetry, etc. in the concessions buidling as shown for the following lump sum price:					
Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Interior Finish Schedule - Concessions Building	1	LS			

Total Schedule B

\$

Schedule C - Electrical, Mechanical, Plumbing & Lighting

- C-1** Including all labor, materials, equipment, and incidentals necessary for the construction and installation of all electrical work needed to supply power and electrical infrastructure & lighting to the concessions building, as specified, for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Electrical - Concessions Building	1	LS			

- C-2** Including all labor, materials, equipment, and incidentals necessary for the construction and installation of all electrical work needed to install electrical service to the site as well as site distribution to the various buildings as specified, for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Electrical Site Work & Service Connection	1	LS			

- C-3** Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of plumbing, piping, fixtures, and appurtenances as specified for the concessions building:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
HVAC - Concessions Building	1	LS			

- C-4** Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of equipment, ductwork, appurtenances as specified for the concessions building:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Plumbing - Concessions Building	1	LS			

Total Schedule C

\$ _____

Alternate #1 - Infield Clearing and Grading

Alt 1-1 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for clearing, and grading of the baseball infield within the limits shown for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Infield Clearing & Grading - East Field	1	EA			

Alt 1-2 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for clearing, and grading of the baseball infield within the limits shown for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Infield Clearing & Grading - North Field	1	EA			

Alt 1-3 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for clearing, and grading of the baseball infield within the limits shown for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Infield Clearing & Grading - South Field	1	EA			

Alt 1-4 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for clearing, and grading of the baseball infield within the limits shown for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Infield Clearing & Grading - West Field	1	EA			

Total Alternate 1

\$ _____

Alternate #2 - Batting Cage Building

Alt 2-1 Including furnishing and handling all equipment, labor, and incidentals necessary for installation of the batting cage building structure as specified.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Metal Building Erection - Batting Cages	1	LS			

Alt 2-2 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete foundations as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Foundation - Batting Cage Building	1	LS			

Alt 2-3 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete floor as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Floor - Batting Cage Building	1	LS			

Alt 2-4 Including all labor, materials, equipment, and incidentals necessary for the construction and installation of all electrical work needed to supply power and electrical infrastructure & lighting to the Batting Cage building, as specified, for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Electrical - Batting Cage Building	1	LS			

Alt 2-5 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of Batting Cage Netting as specified for the following price per each. :

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Batting Cage Netting	1	LS			

Total Alternate 2

\$

Alternate #3 - Storage Building

Alt 3-1 Including furnishing and handling all equipment, labor, and incidentals necessary for installation of the Storage building structures as specified.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Metal Building Erection - Storage Building	1	LS			

Alt 3-2 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete foundations as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Foundation - Storage Building	1	LS			

Alt 3-3 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete floor as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Floor - Storage Building	1	LS			

Alt 3-4 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of doors, frames, hardware, and appurtenances as specified for the storage building:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Doors Frames & Hardware - Storage	1	LS			

Alt 3-5 Including all labor, materials, equipment, and incidentals necessary for the construction and installation of all electrical work needed to supply power and electrical infrastructure & lighting to the Storage building, as specified, for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Electrical - Storage Building	1	LS			

Total Alternate 3

\$ _____

Alternate #4 - Playground & Cover Structure

Alt 4-1 Including furnishing and handling all equipment, labor, and incidentals necessary for installation of the Playground Cover building structures as specified.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Metal Building Erection - Playground Cover	1	LS	_____	_____	_____

Alt 4-2 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for installation of concrete foundations as specified. Concrete mix is to be supplied by owner.

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Concrete Foundation - Playground Cover	1	LS	_____	_____	_____

Alt 4-3 Including all labor, materials, equipment, and incidentals necessary for the construction and installation of all electrical work needed to supply power and electrical infrastructure & lighting to the Playground Cover building, as specified, for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Electrical - Playground Cover Building	1	LS	_____	_____	_____

Alt 4-4 Including furnishing and handling all materials, equipment, labor, and incidentals necessary for the installation of the Playground Equipment as specified, for the following lump sum price:

Item Description	Quantity	Unit	Unit Price (Words)	Unit Price (Figures)	Total
Playground Equipment	1	LS	_____	_____	_____

Total Alternate 4

\$ _____

BID SUMMARY

TOTAL SCHEDULE A	A-1	to	A-22	\$ _____
TOTAL SCHEDULE B	B-1	to	B-10	\$ _____
TOTAL SCHEDULE C	C-1	to	C-4	\$ _____
TOTAL BASE BID				\$ _____
TOTAL ALTERNATE #1				\$ _____
TOTAL ALTERNATE #2				\$ _____
TOTAL ALTERNATE #3				\$ _____
TOTAL ALTERNATE #4				\$ _____
TOTAL BASE BID AND ALTERNATES				\$ _____

BID BOND

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

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum

\$

(Words)

(Figures)

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

BIDDER

SURETY

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:

Signature

By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Signature

Attest:

Signature

Title

Title

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

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

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

NOTICE OF AWARD

Date of Issuance:

Owner:

Owner's Contract No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's Address:

TO BIDDER:

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

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

The Contract Price of the awarded Contract is: \$ _____

Three (3) unexecuted counterparts of the Agreement accompany this Notice of Award.

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

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

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

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

By: _____ (Authorized Signature)

Title: Baker & Associates, Inc. (Engineer)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

by _____,

this the _____ day of _____ 20__.

By _____

Title _____

EJCDC® C-510 (Rev. 1), Notice of Award.

Prepared and published 2013 by the Engineers Joint Contract Documents Committee.

Page 1 of 1

DOCUMENT 00520 AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____
in the year 2020 by and between city of Scottsbluff, Nebraska (hereinafter called
OWNER) and _____
(hereinafter called CONTRACTOR).

CONTRACT NAME: 23 Club Improvements 2020
 Contract 002-167-18

OWNER and CONTRACTOR, in consideration of the mutual covenants
hereinafter set forth, agree as follows:

Article 1. WORK.

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

??To be completed when project is awarded??

Article 2. CONTRACT PRICE.

2.1 OWNER shall pay CONTRACTOR for completion of the Work in
accordance with the Contract Documents in current funds as
demonstrated on the attached Bid Forms with a total agreement price of
\$_____, as described in Article 1 above.

Article 3. ENGINEER.

The Project has been designed by Baker & Associates, Inc, 120 East 16th, Suite A, Scottsbluff, NE 69361, who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

Article 4. CONTRACT TIME.

4.1 The Work will be substantially completed by May 1, 2021 and completed and ready for final payment in accordance with paragraph 15.06 of the General Conditions within 15 days from the substantial completion date. These dates are based on the assumption that construction would begin no later than August 15, 2020. If start of construction is delayed beyond this date, substantial and final completion dates would be extended accordingly based on the actual start date.

4.2 Liquidated Damages.

OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and the OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.1 above, plus any extensions thereof allowed in accordance with Article 11 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER \$500.00 for each day that expires after the time specified in paragraph 4.1 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 \$500.00 for each day that expires after the time specified in paragraph 4.1 for completion and readiness for final payment.

Article 5. PAYMENT PROCEDURES.

CONTRACTOR shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

5.1 Progress Payments.

OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, on or about the last day of each month during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established in paragraph 2.03 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.

- A. 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 shall determine, or OWNER may withhold, in accordance with paragraph 15.01.C.5 of the General Conditions.
 - 1. Payment shall be equal to 90% of Work completed (10% retainage). If the Contract has reached the 50% completion status, as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be a 5% retainage on account of Work completed in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 95% of the Work completed.
 - 2. Payment for materials shall be equal to 90% of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 15.02 of the General Conditions).

- B. Upon Substantial Completion, progress payments will be made in an amount sufficient to increase total payments to CONTRACTOR to 100% of the Contract Price, less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 15.01.C.5 of the General Conditions.

5.2 Final Payment.

Upon final completion and acceptance of the Work in accordance with paragraph 15.06 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 15.06.

Article 6. CONTRACTOR'S REPRESENTATIONS.

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- 6.1 CONTRACTOR has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
- 6.2 CONTRACTOR has studied carefully all reports of explorations and tests of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in paragraph 5.03 of the General Conditions, and accepts the determination set forth in the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which CONTRACTOR is entitled to reply.
- 6.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in paragraph 6.2 above) which pertain to the subsurface or physical conditions at or contiguous to the site or otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 5.03 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.

- 6.4 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Contract 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, studies or similar information or data in respect of said Underground Facilities are or will be required by CONTRACTOR 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 Documents, including specifically the provisions of paragraph 5.05 of the General Conditions.
- 6.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- 6.6 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

Article 7. CONTRACT DOCUMENTS.

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

- 7.1 This Agreement (pages 1 to 7, inclusive).
- 7.2 Exhibits to this Agreement including _____
- 7.3 Notice of Award, identified as Document C-510 and consisting of 1 page.
- 7.4 Notice to Proceed, identified as Document C-550 and consisting of 1 page
- 7.5 Performance Bond, identified as Documents C-610 and consisting of 3 pages.
- 7.6 Payment Bond, identified as Documents C-615 and consisting of 3 pages.
- 7.7 General Conditions (pages 1 to 62, inclusive).
- 7.8 Supplementary Conditions (Document 0800, inclusive).

- 7.9 Specifications bearing the title “**23 Club Improvements 2020**” listed in table of contents thereof.
- 7.10 Drawings bearing the title “**23 Club Improvements 2020**” as listed in the table of contents of the Specifications.
- 7.11 Addenda numbers _____ to _____, inclusive.
- 7.12 CONTRACTOR's Bid (Document C-410, inclusive).
- 7.13 The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying, or supplementing the Contract Documents pursuant to paragraphs 11.01 of the General Conditions.
- 7.14 The documents listed in paragraphs 7.2 et seq. above are attached to this Agreement (except as expressly noted otherwise above).

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 11.01 of the General Conditions.

Article 8. MISCELLANEOUS.

- 8.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.
- 8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents 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.
- 8.3 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 of all covenants, agreements and obligations contained in the Contract Documents.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

This Agreement will be effective on _____, 2020.

OWNER _____

CONTRACTOR _____

BY _____

BY _____

TITLE _____

TITLE _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest _____

Attest _____

Mailing Address for giving notices

Mailing Address for giving notices

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

License No. _____

Agent for service of process:

(If CONTRACTOR is a corporation,
attach evidence of authority to sign.)

NOTICE TO PROCEED

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

TO CONTRACTOR:

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

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

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

Owner:

Authorized Signature

By:

Title:

Date Issued:

ACCEPTANCE OF NOTICE - CONTRACTOR

Receipt of the above NOTICE TO PROCEED is hereby acknowledged

by _____ ,
this the _____ day of _____ 20__.
By _____ Title _____

PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

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

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

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

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

EJCDC® C-610, Performance Bond

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

14. Definitions

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

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

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

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

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

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

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

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

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

CONTRACTOR AS PRINCIPAL

SURETY

(seal)

Contractor's Name and Corporate Seal

(seal)

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Title

Title

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

EJCDC® C-615, Payment Bond

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

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

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

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

8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

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

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

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

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

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

18. Modifications to this Bond are as follows:

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



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These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 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, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

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

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

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

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

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

1.02 *Terminology*

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

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

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

2.02 *Copies of Documents*

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

2.03 *Before Starting Construction*

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

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

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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

2.05 *Initial Acceptance of Schedules*

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

2.06 *Electronic Transmittals*

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

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

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 Intent

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

3.02 Reference Standards

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

3.03 Reporting and Resolving Discrepancies

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

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

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

B. *Resolving Discrepancies:*

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

3.04 *Requirements of the Contract Documents*

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

3.05 *Reuse of Documents*

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

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

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

4.02 *Starting the Work*

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

4.03 *Reference Points*

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

4.04 *Progress Schedule*

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

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

4.05 *Delays in Contractor's Progress*

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

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

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

5.01 *Availability of Lands*

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

5.02 *Use of Site and Other Areas*

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

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

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

5.03 *Subsurface and Physical Conditions*

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

5.04 *Differing Subsurface or Physical Conditions*

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

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

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

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

5.05 *Underground Facilities*

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

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

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

5.06 *Hazardous Environmental Conditions at Site*

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

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

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

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

6.02 *Insurance—General Provisions*

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

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

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

6.03 Contractor's Insurance

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

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

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

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

6.04 *Owner's Liability Insurance*

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

6.05 *Property Insurance*

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

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

6.06 *Waiver of Rights*

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

6.07 *Receipt and Application of Property Insurance Proceeds*

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

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

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

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

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

7.02 *Labor; Working Hours*

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

7.03 *Services, Materials, and Equipment*

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

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

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

7.04 "Or Equals"

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

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

7.05 Substitutes

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

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

7.06 *Concerning Subcontractors, Suppliers, and Others*

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

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

O. Nothing in the Contract Documents:

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

7.07 *Patent Fees and Royalties*

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

7.08 *Permits*

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

7.09 *Taxes*

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

7.10 *Laws and Regulations*

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

7.11 *Record Documents*

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

7.12 *Safety and Protection*

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

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

7.13 *Safety Representative*

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

7.14 *Hazard Communication Programs*

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

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

7.15 *Emergencies*

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

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

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

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

1. *Shop Drawings:*

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

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

2. *Samples:*

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

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

C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

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

E. *Resubmittal Procedures:*

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

7.17 *Contractor's General Warranty and Guarantee*

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

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

7.18 *Indemnification*

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

7.19 *Delegation of Professional Design Services*

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

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

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

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

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

8.02 *Coordination*

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

8.03 *Legal Relationships*

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

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

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

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

9.03 *Furnish Data*

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

9.04 *Pay When Due*

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

9.05 *Lands and Easements; Reports, Tests, and Drawings*

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

9.06 *Insurance*

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

9.07 *Change Orders*

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

9.08 *Inspections, Tests, and Approvals*

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

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

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

9.11 *Evidence of Financial Arrangements*

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

9.12 *Safety Programs*

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

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

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

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

10.03 *Project Representative*

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

10.04 *Rejecting Defective Work*

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

10.05 *Shop Drawings, Change Orders and Payments*

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

10.06 *Determinations for Unit Price Work*

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

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

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

10.08 *Limitations on Engineer's Authority and Responsibilities*

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

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

10.09 *Compliance with Safety Program*

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

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

11.01 *Amending and Supplementing Contract Documents*

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

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

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

11.02 *Owner-Authorized Changes in the Work*

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

11.03 *Unauthorized Changes in the Work*

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

11.04 *Change of Contract Price*

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

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

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

11.05 *Change of Contract Times*

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

11.06 *Change Proposals*

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

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

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

11.07 Execution of Change Orders

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

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

11.08 *Notification to Surety*

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

ARTICLE 12 – CLAIMS

12.01 *Claims*

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

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

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

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

13.01 Cost of the Work

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

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

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

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

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

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

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

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

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

13.02 Allowances

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

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

13.03 *Unit Price Work*

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

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

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

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

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

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

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

14.03 *Defective Work*

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

14.04 *Acceptance of Defective Work*

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

14.05 *Uncovering Work*

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

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

14.06 *Owner May Stop the Work*

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

14.07 *Owner May Correct Defective Work*

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

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

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

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

15.01 Progress Payments

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

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

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

D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

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

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

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

15.02 *Contractor's Warranty of Title*

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

15.03 *Substantial Completion*

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

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

15.04 *Partial Use or Occupancy*

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

15.05 *Final Inspection*

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

15.06 *Final Payment*

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

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

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

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

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

- C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

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

15.07 *Waiver of Claims*

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

15.08 *Correction Period*

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

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

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

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

16.02 *Owner May Terminate for Cause*

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

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

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

16.03 *Owner May Terminate For Convenience*

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

16.04 *Contractor May Stop Work or Terminate*

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

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

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

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

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

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

18.02 *Computation of Times*

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

18.03 *Cumulative Remedies*

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

18.04 *Limitation of Damages*

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

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Headings*

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

SECTION 00810 MODIFICATIONS TO GENERAL CONDITIONS

PART 1 GENERAL:

The General Conditions (Document C-700) are hereby amended, voided and/or otherwise modified by the following conditions:

PART 2 COPIES OF DOCUMENTS (REFERENCE ARTICLE 2, PARAGRAPH 2.02):

The Owner shall not provide any additional copies of the documents. A set of electronic files in Adobe® Portable Document File (pdf) format will be issued to the Contractor by the Engineer. The Engineer can provide hard copies upon request at the cost of reproduction.

PART 3 REFERENCE POINTS (REFERENCE ARTICLE 4, PARAGRAPH 4.03.A):

Add the following sentences:

Reference Points shall be defined as staking the reference benchmarks shown on the construction drawings. A minimum of two control points will be provided with a project benchmark, plus one additional point and benchmark for each additional 10 acres of site.

PART 4 ELECTRONIC DATA (REFERENCE ARTICLE 3, PARAGRAPH 3.01):

Add the following paragraph:

Baker & Associates, Inc. considers that plans and specifications are approved documents only if: 1) they are paper copies with original signatures and professional certification visibly present on the copies or 2) electronic files in Adobe® Portable Document File (pdf) format issued directly by Baker & Associates, Inc. (hereinafter referred to as electronically transmitted data). Information supplied via methods other than those noted above are not to be considered approved documents. The receiver of electronically transmitted documents is responsible for verifying the information is approved documents. This electronic information is copyrighted and may not be transferred to any other party.

PART 5 INSURANCE REQUIREMENTS (REFERENCE ARTICLE 6):

The following requirements shall supplement the requirements of Article 6. None of the requirements of Article 6 shall be voided or changed by requirement under this Part.

The Contractor shall procure and maintain at his own expense, during the Contract time, liability insurance as follows:

Contractor's General Public Liability and Property Damage Insurance including vehicle coverage issued to the Contractor and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the Contract Documents, whether such operations be by himself or by a Subcontractor under him, or anyone directly or indirectly employed by the Contractor or by a Subcontractor under him.

Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained to any one person in any one accident; and a limit of liability of not less than \$2,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$500,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damage sustained by two or more persons in any one accident.

Both the Owner and Engineer shall hold the Certificate of Insurance.

PART 6 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT (REFERENCE ARTICLE 15, PARAGRAPH 15, Part D.1):

Delete Paragraph 15.01.D.1 in its entirety and replace with the following paragraph:

Thirty days after the presentation of the Application for Payment with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 15.01.E) become due and when due will be paid by OWNER to CONTRACTOR.

END OF SECTION

SECTION 00815 SUBSURFACE INFORMATION

No subsurface exploration has been conducted in connection with this Contract. It shall be the Contractor's responsibility to make such investigations as he/she deems necessary, and for ascertaining the subsurface conditions he/she will encounter.

END OF SECTION

SECTION 00820 STATE REQUIREMENTS

PART 1 NEW EMPLOYEE WORK ELIGIBILITY STATUS:

The Contractor is required and hereby agrees to use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program authorized by the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324a, known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee.

1.1 PROPRIETORSHIPS:

If the Contractor is an individual or sole proprietorship, the following applies:

- A. The Contractor must complete the United States Citizenship Attestation Form, available on the Department of Administrative Services website at www.das.state.ne.us.
- B. If the Contractor indicates on such attestation form that he or she is a qualified alien, the Contractor agrees to provide the US Citizenship and Immigration Services documentation required to verify the Contractor's lawful presence in the United States using the Systematic Alien Verification for Entitlements (SAVE) Program.

The Contractor understands and agrees that lawful presence in the United States is required and the Contractor may be disqualified or the contract terminated if such lawful presence cannot be verified as required by Neb. Rev. Stat. §4-108.

PART 2 ONE-CALL NOTIFICATION ACT:

The Contractor shall meet all the requirements of the Nebraska One-Call Notification Act (State of Nebraska Title 155, Chapter 2).

END OF SECTION

SECTION 01010 SCHEDULE OF WORK

PART 1 SCHEDULE:

The planned schedule for this contract is for the work to start no later than September 25, 2019 after completion of the site demolition and preliminary grading work is completed. The work shall be substantially complete by May 15, 2020 and final completion by May 30, 2020 for use in the 2020 baseball season.

END OF SECTION

SECTION 01015 OWNER FURNISHED ITEMS:

PART 1 GENERAL:

The Owner will furnish no labor, no equipment, and no materials to the Contractor, except as listed following. It is the intention of this Contract to require the Contractor to furnish all labor, materials and equipment necessary to complete the construction of the work as outlined in the Specifications and as shown on the Drawings and Detail Drawings.

PART 2 WATER:

All water required for flushing, testing and disinfection of water mains installed or storage tanks recoated under this contract (as applicable), shall be furnished to the Contractor without charge so long as such water is used without obvious waste. The Contractor shall make all provisions necessary to obtain the water from the designated place and to convey it to the place of use without waste. Water required for cleaning or compaction activities shall be furnished by the Contractor.

END OF SECTION

SECTION 01025 MEASUREMENT AND PAYMENT:

PART 1 Unit Prices:

It is to be understood that the quantities of each item of work set forth in the Bid are approximate only and will be revised depending on field conditions encountered. The Owner has the right to revise quantities in its best interest without affecting any of the unit prices set forth above. In all cases, the stated unit prices Bid shall be used in determining the final value of the completed work.

PART 2 Application for Payment:

Attached to the end of Section 01000 is a copy of Form 01025-A, the Application for Payment that will be used for this project. The Contractor shall submit the application for payment on this form, or in similar form, if approved in writing, by the Engineer. This form is available on electronic media.

PART 3 Change Order Procedures:

The Contractor shall request in writing all change order items prior to proceeding with any such work. The request shall include detailed unit and/or lump sums prices and justification for the proposed work. Should the Owner or Engineer request a modification to the project which requires a change order, the Contractor shall submit a written cost of the modifications to the Engineer prior to beginning the modification. The final documentation for a change order will be submitted on Form 01025-B as attached to Section 01000.

END OF SECTION

SECTION 01030 ALTERNATE CONSTRUCTION ACTIVITIES:

PART 1 The following construction activities are either additions to the Contract, for which the Owner is unsure of the certainty of their being included in the proposed construction; or are alternate methods of construction which may replace a specified construction activity.

PART 2 The alternates in this contract include:

Requires Modification
Ver.18

General Requirements

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1. Batting Cage Building (structure, foundation, floor, electrical and netting)
2. Storage Building (structure, foundation, floor, electrical and doors)
3. Playground Equipment and Cover (structure, foundation, and electrical)

END OF SECTION

SECTION 01040 CONSTRUCTION COORDINATION:

The Contractor shall be responsible for coordinating all phases of his/her operations with the Engineer and Owner. Advance notice of not less than 48 hours will be given to the Engineer prior to any operations.

END OF SECTION

SECTION 01050 CONSTRUCTION SURVEY WORK:

PART 1 Construction Staking:

The Engineer will provide control points and project benchmark(s) for the project. A minimum of two control points will be provided with a project benchmark, plus an additional point and benchmark for each additional 10 acres of site. It shall be the Contractor's responsibility to maintain all stakes and reference elevations and replacement of stakes shall be at the Contractor's expense.

END OF SECTION

SECTION 01060 REGULATORY REQUIREMENTS:

PART 1 GENERAL:

It shall be the Contractor's responsibility to familiarize himself/herself with the regulatory requirements with regard to the location of the project and the type of work to be performed under the Contract.

PART 2 SAFETY:

All regulations pertaining to safety, to include Occupational Safety & Health Association (OSHA) Standards, shall be strictly adhered to by the Contractor. Particular care shall be exercised in connection with the operation of vehicles and other equipment on the site. Safety barriers and equipment shall be provided by the Contractor as required.

PART 3 PERMITS:

It shall be the Contractor's responsibility to obtain all necessary permits as required by State and Local codes to perform the work required as part of this Contract.

PART 4 SWPPP:

The Contractor shall prepare a Stormwater Pollution Prevent Plan as required by State and Local agencies. The Engineer will provide Site Plan and Detail Drawings based on the layout and materials the Contractor would like to submit to the reviewing agency. The Contractor shall maintain the SWPPP until all permit requirements are satisfied, including maintenance of all erosion features until final acceptance by the review agency.

PART 5 BUILDING CODES:

The following Standard Codes of construction practices are hereby made a portion of these Specifications and shall govern all applicable construction activities carried out under this Contract.

- 4.1 National Electrical Code (NEC)
- 4.2 Building Code, Plumbing Code, Energy Conservation Code and Mechanical Code as adopted by the Owner or controlling agency. This shall include any specific regulations or standards adopted by the Owner/agency that identify construction practices. If the Owner or agency has not adopted such codes, the International Codes shall govern.
- 4.3 The Americans with Disabilities Act of 2010 (ADA) and Nebraska Accessibility Guidelines (NAG).

END OF SECTION

SECTION 01120 ASBESTOS CONTAINING MATERIALS:

- PART 1 During construction or remodeling activities involving existing buildings, there exists the possibility that Asbestos Containing Materials (ACM) may be encountered. The Building Owner may not be aware of the location of all ACM within the building. It shall be the Contractor's responsibility to request information from the building owner as to the known locations of ACM and to familiarize himself with those known locations.

PART 2 If during any construction activity, any suspected ACM is encountered by the Contractor, he shall stop all construction activities immediately. The Contractor shall notify the Owner immediately of the suspected ACM to allow evaluation of the suspected material and the appropriate course of action. If the material is found to be ACM and abatement/cleanup procedures are required, the Contract time shall be extended by formal change order to cover the delays encountered by the abatement/cleanup activities.

PART 3 If the Contractor has negligently disturbed an area known to contain ACM, the Contractor shall be held solely responsible for the resulting cleanup operations and elimination of the hazard.

PART 4 No materials supplied under this contract shall contain asbestos in any form.

END OF SECTION

SECTION 01130 PROTECTION OF POTABLE WATER SUPPLIES (ORGANIC CHEMICALS)

PART 1 To prevent contamination of the potable water supplies the Contractor shall not use any solvents, petroleum derived products, caustic or poisonous substances during construction activities involving, potable water pipelines, well and well test hole drilling, water tanks and or any part of a municipal water system that comes into contact with potable water supplies.

PART 2 Special care shall be exercised during refueling and or lubrication activities to prevent spillage of petroleum products that may come in contact with potable water supplies.

PART 3 No substances found on The Environmental Protection Agency List of Monitored Substances or having an Environmental Protection Agency Maximum Contaminant Level (MCL) shall be allowed on the job site.

END OF SECTION

SECTION 01170 SPECIAL CONSTRUCTION PROVISIONS:

The following modifications, additions and special provisions are hereby made a part of these Specifications and shall take precedence over any conflicting requirements.

HISTORICAL AND ARCHEOLOGICAL

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 Federal Funding Agency, and the Nebraska State Historic Preservation Office, (402) 471-4775. No further disturbance of the deposits shall ensue until the Contractor has been notified, in writing, by the Owner that he may proceed. The Owner will issue a notice to proceed only after the state officials have surveyed the find and made a determination to the Federal Funding Agency and the State Historic Preservation Office. 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.

END OF SECTION

SECTION 01200 SPECIAL PROJECT MEETINGS:

The Contractor shall be required to attend a Pre-Construction meeting with the Owner and Engineer prior to the start of construction. The meeting will be held at the Owner's business offices.

END OF SECTION

SECTION 01340 SHOP DRAWINGS, PRODUCT DATA AND SUBMITTALS:

PART 1 GENERAL:

The Contractor shall provide the Engineer with catalog material, capacities, performance curves, dimensions, weights or any other information which may be necessary in order that the conformity with the Specifications may be reviewed for each proposed piece of equipment. The Contractor shall furnish five (5) copies of submittals and/or shop drawings. All such material shall be furnished to the Engineer within thirty (30) days after the date of the "Notice to Proceed". No material or equipment shall be installed without a shop drawing/submittal indicating a "Reviewed" Action on the Shop Drawing/Submittal Transmittal form.

PART 2 SHOP DRAWING REVIEW:

- 2.1 The ENGINEER will review CONTRACTOR's shop drawings and related submittals (as indicated below) with respect to the ability of the detailed work, when complete, to be a properly functioning integral element of the overall system designed by the ENGINEER.
- 2.2 Before submitting a shop drawing or any related material to the ENGINEER, the CONTRACTOR shall:
 - A. Review each such submission for conformance with the means, methods, techniques, sequences, and operations of construction, and safety precautions and programs incidental thereto, all of which are the sole responsibility of CONTRACTOR; and
 - B. Approve each submittal before delivering it to the ENGINEER, providing a stamp on each such submission indicating the CONTRACTOR'S review and approval of the submittal.
- 2.3 The CONTRACTOR shall certify the shop drawing have been reviewed by and approved with respect to the means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incidental thereto by utilizing (and signing) the submittal transmittal form (Form 01340A) following this Division.
- 2.4 The ENGINEER shall assume that no shop drawing or related submittal comprises a variation to the specified material or equipment unless CONTRACTOR advises the ENGINEER otherwise, via a written instrument, which is acknowledged by the ENGINEER in writing.

- 2.5 The shop drawings to be submitted for a particular construction activity are identified in the SECTION describing the construction activity. Shop drawings to be submitted, in addition to those listed elsewhere in the Contract Documents, are identified following.

Item: _____

- 2.6 In the event that the ENGINEER will require more than ten (10) working days to perform the review, the ENGINEER shall so notify CONTRACTOR. The ENGINEER shall return shop drawings with comments provided that each submission has been called for and is stamped by CONTRACTOR as indicated above. The ENGINEER shall return, without comment, material not called for or which has not been approved by CONTRACTOR.

PART 3 OPERATION MANUALS:

Upon completion of the Contract, and prior to final payment, the Contractor shall furnish the Owner, two copies of the manufacturer's operation and maintenance manuals and parts lists for each piece of equipment furnished. Product data sheets shall be supplied for those materials and equipment that are not provided with a manufacturer's operation and maintenance manual.

PART 4 ELECTRICAL CERTIFICATION:

Prior to final acceptance and payment for the project, the Contractor shall provide written certification that the project has been inspected by the electrical inspector having jurisdiction over the electrical portion of the project and that any items of non-compliance have been corrected.

PART 5 RESPONSIBILITY:

The Contractor shall not be relieved of his/her responsibility to supply equipment meeting all requirements of the Specifications by any reviews of submittals or shop drawings by the Engineer.

END OF SECTION

SECTION 01440 CONTRACTOR'S QUALITY CONTROL:

PART 1 GENERAL:

The work performed under these specifications shall be executed in the best and most workmanlike manner by qualified, careful and competent personnel of the respective trades in strict accordance with these specifications, applicable drawings, appropriate codes and the best current construction practices.

PART 2 QUALITY CONTROL:

The Engineer may elect to have a commercial testing laboratory conduct testing at random locations or areas where work or materials are of questionable qualities in his opinion. In the event such tests indicate the quality of materials or work is at or above the minimum Contract specifications, the Owner will make payment for the tests. The cost of the test results that indicate qualities of work or materials below the minimum Contract specifications will be charged to the Contractor's account.

END OF SECTION

SECTION 01441 CONSTRUCTION OBSERVATION & TESTING SCHEDULE

Contractor requests for material testing or construction observations at times other than normal working hours 7:00 a.m. - 6:00 p.m. weekdays, shall be at the discretion of the Engineer. In any event, the contractor's account will be charged one-half times the Engineer's rate being charged the Owner for all hours worked; except on legal holidays (Federal and/or Owner) which will be charged at the Engineer's full rate.

END OF SECTION

SECTION 01540 PROTECTION OF WORK AND PROPERTY:

The Contractor shall be responsible to check and determine that all necessary precautions have been taken to protect all property, both public and private, in all areas where this Contract is being accomplished. Damage caused from failure by the Contractor to exercise care in the performance of work shall be immediately replaced or restored to the satisfaction of the Engineer without additional cost to the Owner.

END OF SECTION

SECTION 01560 CONSTRUCTION CLEANING:

PART 1 DAILY CLEANUP:

- 1.1 The areas where work is in progress shall be kept as neat and clean as is consistent with the work in progress. Materials, wrappings, containers which might be scattered by wind or become a hazard to pedestrians shall be placed in appropriate containers, disposed of or otherwise cared for.
- 1.2 All debris shall be removed from the job site each day. All scrap and debris shall be disposed of, off of the Owner's property, at no additional cost to the Owner.

PART 2 FINISH GRADING:

- 2.1 The Contractor shall grade the trench line and all surrounding areas, where the grade has been disturbed during construction, to a smooth grade to affect a neat and workmanlike appearance.
- 2.2 Any adjacent areas which are damaged by the Contractor, due to demolition or removals, shall be repaired to the satisfaction of the Engineer or be replaced.

PART 3 FINAL CLEANUP:

- 3.1 Upon completion of the project, the Contractor shall remove all rubbish and accumulated materials and scrap from the premises leaving the job site in a clean, acceptable condition.
- 3.2 All salvageable items shall remain the property of the Owner and shall be disposed of as directed by the Owner's representative.

- 3.3 Excess excavated materials and construction debris, if any, shall be hauled away to a location selected by the Contractor, off the Owner's property, easements, and rights-of-way.
- 3.4 It is intended that the Contractor leave the work area in a similar and equal condition as existed prior to commencement of construction.
- 3.5 Every effort shall be made to protect and preserve the environment. Erosion shall be controlled and kept to a minimum. No discharge of fuels or waste liquids which would be harmful to the environment shall be allowed.

PART 4 Reference Section 02212, SURFACE RESTORATION

END OF SECTION

SECTION 01570 TRAFFIC CONTROL:

The Contractor shall be required to furnish, install and maintain traffic control devices in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), Federal Highway Administration, U.S. Department of Transportation. Traffic control devices shall be used when the Work is in street right of way.

END OF SECTION

SECTION 01580 PROJECT IDENTIFICATION AND SIGNS:

PROJECT SIGN:

The Contractor shall construct the following project sign to be located at the construction site:

CONTRACTOR -	
ENGINEER -	BAKER & ASSOCIATES
PROJECT COST -	
FINANCIAL ASSISTANCE -	D.E.D

Lettering shall be a minimum two (2) inches high on a 4' x 6' board.

END OF SECTION

SECTION 01660 STARTING OF SYSTEMS:

PART 1 It shall be the Contractor's responsibility to provide system start up services to insure that all equipment is properly installed and operating as intended.

PART 2 Reference Division 11, Section 11000, GENERAL EQUIPMENT REQUIREMENTS

END OF SECTION

SECTION 01740 WARRANTIES AND BONDS:

PART 1 PERFORMANCE BOND:

The Contractor shall be required to maintain the Performance Bond during the life of the Contract and for a period of one year after the date of final acceptance of all work performed under the Contract.

PART 2 PAYMENT BOND:

The Contractor shall be required to maintain the Payment Bond during the life of the Contract and for a period of one year after the date of final acceptance of all work performed under the Contract.

PART 3 EQUIPMENT GUARANTEE:

All equipment and installation shall be guaranteed by the Contractor for one year after the date of substantial completion of the entire Contract. The Contractor shall immediately repair or replace any defects within the guarantee period due to faulty equipment, material, installation or workmanship at his own expense.

END OF SECTION

SECTION 01800 MAINTENANCE OF BACKFILL:

All backfill shall be maintained in a satisfactory condition, and all places where settlement is evident shall be filled by the Contractor and maintained during the life of the Contract and for a period of one year after the date of final acceptance of all work performed under the Contract. When the Contractor is notified by the Engineer or Owner that any backfill is hazardous, the Contractor shall correct or make repairs of such hazardous conditions at once. Any utilities and pavements damaged by any such settlement shall be the responsibility of the Contractor. The Contractor shall be responsible for all claims for damages filed with the court, actions brought against the Owner for, and on account of, such damage.

END OF SECTION

Owner: **OWNER NAME**
ADDRESS
CITY, STATE ZIP
PHONE
FAX

Contractor: **CONTRACTOR NAME**
ADDRESS
CITY, STATE ZIP
PHONE
FAX

Project: PROJECT NUMBER
PROJECT TITLE

Item No.	Description of Work	Scheduled Value		Amount	Work Completed		Materials Stored **	Total Completed Plus Stored	% Completed
		Unit Price	Quantity		Quantity	Retainage *			
CONTRACTOR'S Certification: The undersigned CONTRACTOR certifies that: (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with Work covered by all prior Applications for Payment, inclusive; (2) title to all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all liens, claims, security interest and encumbrances (except such as are covered by Bond acceptable to OWNER indemnifying OWNER against any such lien, claim, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective as that term is defined in the Contract Documents.									
Contractor:		Authorized Signature			Dated:		Total Contract Amount:		
							Total value of work & materials completed:		
							Less amount paid, previous estimates:		
							Less retainage: 10%		
							TOTAL AMOUNT DUE THIS APPLICATION:		
Payment of the above AMOUNT DUE THIS APPLICATION is recommended.									
Baker & Associates:		Authorized Signature			Dated:				
		Baker & Associates, Inc.			Engineers * Architects * Surveyors		120 East 16th Street, Suite A, Scottsbluff, Nebraska 69301		

* - Retainage based on percent of completion of the individual item
** - Materials on site, not installed (Invoices required)



Engineers - Architects - Surveyors
Since 1977

120 East 16th Street
Scottsbluff, Nebraska 69361
(308) 632-3123
Fax: 632-7253

OWNER: OWNER NAME
ADDRESS
CITY, STATE ZIP
PHONE
FAX

CHANGE ORDER NO. 1
DATE:

PROJECT: PROJECT NUMBER
PROJECT TITLE

CONTRACTOR: OWNER NAME
ADDRESS
CITY, STATE ZIP
PHONE
FAX

ITEM NO.	DESCRIPTION / JUSTIFICATION:	AMOUNT
1.)		
2.)		
3.)		
4.)		
5.)		
6.)		
7.)		
8.)		

REVISION IN CONTRACT AMOUNT:

CURRENT CONTRACT PRICE + (-) PREVIOUS CHANGE ORDERS

AMOUNT THIS CHANGE ORDER _____

REVISED CONTRACT AMOUNT _____

REVISED CONTRACT TIME + (-) BY _____ CALENDAR DAYS

SUBMITTED BY CONTRACTOR _____ **DATE:** _____

ACCEPTED BY B & A _____ **DATE:** _____

APPROVED BY OWNER _____ **DATE:** _____

Baker & Associates, Inc. Engineers * Architects * Surveyors 120 East 16th Street, Suite A, Scottsbluff, Nebraska 69361

FORM 01025-B



Engineers - Architects - Surveyors
Since 1977

SHOP DRAWING/SUBMITTAL TRANSMITTAL

CONTRACT: PROJECT TITLE
PROJECT NO. PROJECT NUMBER

SUBMITTAL NO. _____
SECTION: _____
COPIES: _____

OWNER: OWNER NAME
ADDRESS
CITY, STATE ZIP
PHONE
FAX

CONTRACTOR: CONTRACTOR NAME
ADDRESS
CITY, STATE ZIP
PHONE
FAX

FOR COMPLETION BY THE CONTRACTOR:		FOR COMPLETION BY THE CONSULTANT:	
DESCRIPTION	MANUFACTURER	ACTION	NOTES
<p>I, the undersigned Contractor, have reviewed and approved this shop drawing with respect to the means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incidental thereto. I also warrant that this shop drawing/submittal complies with contract documents and comprises no variations thereto.</p> <p>SUBMITTED BY: _____</p> <p>CONTRACTOR NAME _____ DATE _____</p>		<p>DATE RECEIVED: _____</p> <p>RWV - REVIEWED REJ - REJECTED SUB - SUBMIT SPECIFIED ITEM FAC - FURNISH AS CORRECTED REV - REVISE AND RESUBMIT INR - ITEM NOT REVIEWED</p> <p>REVIEWED BY: _____</p> <p>Baker & Associates, Inc. _____ DATE _____</p>	

This review was performed only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Modifications or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item does not include approval of the assembly of which the item is a component. Contractor is responsible for dimensions to be confirmed and correlated at the job site; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; coordination of the work of all trades; and for performing all work in a safe and satisfactory manner.

Baker & Associates Inc., 120 East 16th Avenue, Ste A, Scottsbluff, NE 69361
Telephone - (308)632-3123 Facsimile - (308)632-7253

FORM 01340-C

SECTION 02210 EARTHWORK - SITE GRADING

PART 1 GENERAL:

This Section covers earthwork excavation, embankment and fill construction. It is the intention of this Section for the Contractor to furnish all equipment and labor to perform the construction activities described following:

PART 2 MATERIALS:

2.1 Moisture Content:

- A. Material may be moisture conditioned at the site of excavation or at the embankment/fill site at the Contractor's option. Material which contains excess moisture shall be dried until the required compaction can be obtained.
- B. The materials shall be conditioned to have a moisture content at the time of compaction such that the specified compaction may be obtained with the equipment being used. At all times, it shall be the responsibility of the Contractor to employ such means as may be necessary to secure a uniform moisture content throughout the material being compacted.

2.2 Suitability:

- A. The Engineer shall determine the suitability of the materials in the various portions of the work in accordance with the provisions specified herein. Oversize material or unsuitable material shall be broken down to acceptable sizes or shall be removed from the work.
- B. Material from excavation which is suitable for compacted embankment/fill shall be dense and homogeneous when compacted. The material shall be free of all organic material and of all material larger than five (5) inches in maximum dimensions.
- C. All excavated materials that are free of oversize materials that would prevent the placing of material in lifts of the thickness specified and are free of organic material, are suitable for the construction of normal embankment, roadway embankment and fill for drainage.

- D. All excess and/or unsuitable material shall be hauled from the site and disposed of off of the Owner's property.

PART 3 METHODS:

3.1 Foundation Preparation:

- A. All trees, stumps, brush and other vegetation shall be removed prior to excavation and disposed of by the Contractor.
- B. The Contractor shall remove a minimum of 6-inches of topsoil or that amount needed to remove organic material from the area. All suitable topsoil material removed shall be stockpiled and used later as topsoil on areas to receive grass seeding. The replaced topsoil thickness shall be a minimum 0.5 foot.
- C. Surfaces upon which the fill or embankment is to be constructed shall be scarified to a depth of 0.5 foot, moisture conditioned and compacted for a depth of 0.5 foot, to not less than 95% of the Standard Proctor Density when tested in accordance with ASTM D-698. Non-cohesive soils not applicable to Standard Proctor Density testing shall be compacted to 70% relative density as determined by ASTM 4253. Material unsuitable for embankment foundations shall be removed as directed and replaced with suitable material and compacted as compacted embankment.

- 3.2 Embankment/fill shall be constructed in horizontal layers which extend the full width of the cross section. Thickness of the layers shall not exceed 0.5 foot after compaction. When a layer of material is dissimilar from the preceding layer, the materials shall be blended by discing, mixing, scarifying, or a combination of these methods. Compacted embankment/fill shall be compacted to not less than 95% of Standard Proctor Density at optimum moisture. Non-cohesive soils not applicable to Standard Proctor Density testing shall be compacted to 70% relative density as determined by ASTM 4253 & 4354.

- 3.3 During construction, the Contractor shall keep the top of the embankment/fill at such elevation and section to provide natural surface drainage at all times. If the Contractor stops work on any portion of the embankment on account of rain or impending rain, the surface shall be sealed by passing rubber-tired equipment or flat drum rollers over the surface. Before work is resumed in the area, the surface shall be scarified to a depth of not less than 0.5 foot, re-leveled, moisture conditioned, and recompacted to specified density prior to placing the succeeding layer of embankment/fill.

3.4 Excavation Beyond Established Lines:

Precautions shall be taken to preserve, in an undisturbed condition, material beyond the designated lines of the excavations, except unstable material ordered removed by the Engineer. Material loosened beyond the excavation limits as a result of excavation operations shall be considered defective work and be compacted or removed and replaced with compacted fill, as directed by the Engineer.

PART 4 FINISH GRADING:

4.1 Sections and Slopes:

- A. Excavation sections, profiles and slopes shall be cut true and straight in conformity with the lines and grades shown on the Drawings within the following tolerances, measured normal to the excavated surfaces:

<u>Surface</u>	<u>Tolerance</u>
General Grading	.2 foot
Profile or invert of ditches and channels, open areas, parks, athletic fields, and fine grading around buildings.	.1 foot

- B. The extreme of such tolerances shall not be continuous over a distance of 25 feet measured at any place, in any direction, parallel to the excavated surface. No additional payment shall be made for over-excavation.

- 4.2 Temporary openings left in the embankment/fill for structures of other requirements shall have transverse bonding slopes no steeper than 4 feet horizontal to 1 foot vertical.

PART 5 DEWATERING:

The excavation shall be dewatered to the extent required for construction operations to proceed under dry conditions. See Section 02140.

PART 6 TESTS:

Compaction testing of compacted embankment or fill shall be conducted by the Engineer as deemed necessary. If additional testing is required beyond a reasonable amount to determine the quality and effectiveness of the compaction work, or as a result of the Contractor having to re-do portions of the work to meet the requirements described herein, then the costs of any such additional compaction testing required by the Engineer shall be paid for by the Contractor. Generally, testing will be performed at the maximum occurrence of the following schedule:

1. One test at each installation
2. One test for each 500 cubic yards of material

PART 7 MEASUREMENT AND PAYMENT:

No direct payment will be made for earthwork/site grading unless a Bid/Proposal item specifically addresses earthwork quantities. Such construction shall be considered incidental to the construction activity requiring the earthwork/site grading.

PART 8 SURFACE RESTORATION:

See Section 02212.

END OF SECTION

SECTION 02212 SURFACE RESTORATION

PART 1 GENERAL:

- 1.1 The Contractor shall return all areas disturbed during construction to a condition equal to, or better than, that which existed prior to construction, regardless of whether or not such disturbed areas are within or outside of easements or right-of-ways.
- 1.2 This shall include, but not be limited to the following:
 - A. Replacement of pavement and sidewalk areas,
 - B. Replacement of grass sod in lawn areas,
 - C. Repair of sprinkler systems where disturbed or damaged by construction activities,
 - D. Repair of underground utilities disturbed or damaged by construction activities,
 - E. Repair and/or replacement of fences cut or removed as required by construction activities,
 - F. Restoration of ditches, channels, or swales to their original invert elevations and cross sections,
 - G. Reseeding and/or resodding of all vegetated areas disturbed by construction activities, and
 - H. Other work required to restore such areas to their former condition.

PART 2 STRUCTURES:

- 2.1 The site areas for structures shall be graded as indicated on the Drawings, or as directed by the Engineer. The final grading shall provide a neat appearance and shall facilitate positive drainage to natural water courses and allow for positive drainage away from structures.
- 2.2 After finish grading is accepted by the Engineer, the Contractor shall then install the appropriate ground cover as specified or as indicated on the drawings.

PART 3 UTILITIES:

3.1 Areas to Receive Paving:

- A. Paving, curb and gutter, sidewalks or other improvements destroyed, removed, or damaged during construction shall be replaced with the same type, of equal or better quality, consistent with the undisturbed portions of the improvements existing prior to the trench excavation, except as described following.
- B. Edges of existing pavement, sidewalk or curb and gutter shall be saw cut, or otherwise prepared, to provide a smooth uniform edge.
- C. Upon completion and testing of backfilling by the Engineer, a 6-inch base course shall be added. Base course compaction shall be 95% maximum dry density (ASTM D698).
- D. The paving shall be replaced to the same depth as the undisturbed paving (or the following minimum depths), using hot-mix asphaltic cement or concrete as indicated on the Drawings.
 - 1. All hot-mix asphaltic cement pavement used in restoration work shall be a minimum 6-inches thick, full depth asphalt. Preparation for the asphaltic cement paving shall include prime and tack coats. After placing the material, the pavement shall be compacted with a smooth roller. All proposed methods shall be as specified herein, and/or reviewed by the Engineer.
 - 2. Concrete thickness shall be a minimum 6-inch for areas to receive traffic and 5-inch for all other concrete paving unless otherwise shown on the Drawings. All proposed methods shall be as specified herein, and/or reviewed by the Engineer.
- E. All concrete used in the restoration work shall conform to the requirements of Division 3, "Concrete". Joints of concrete shall match/duplicate the existing joint pattern.

3.2 Areas to Receive Gravel Surfacing:

- A. Gravel surfacing shall be replaced to the same depth as that existing prior to excavation, or as a minimum, gravel shall be 2-inches thick. No gravel surfacing shall be replaced prior to the acceptance of the backfill by the Engineer.
- B. The gravel surfacing shall conform to the following gradation requirements.

<u>Sieve Designation</u>	<u>% Passing</u>	<u>Tolerance</u>
3/4-inch	100	0
#4	64	±14
#8	52	±15
#40	24	±21
#200 (CL)	15	-7
Plasticity Index	10-32	

3.3 Areas with Topsoil and/or Vegetation Cover:

- A. When excavation is through lawns, fields, pasture land, or any other areas having a vegetation cover, or any areas where there is naturally existing topsoil, the Contractor shall strip and stockpile separately all topsoil.
- B. This material shall then be replaced on top of the final backfill, after installation of the pipeline. When excavated material must be stored on lawns or other grassed areas, burlap or other suitable coverings shall be used to protect such areas.
- C. When so indicated on the Drawings, or elsewhere in these Specifications, special seeding or the installation of grass sod shall be required in areas where grass has been disturbed or removed during construction.

PART 4 PAYMENT OF RESTORATION ACTIVITIES:

4.1 General:

Restoration activities shall be considered incidental to the contract unless a specific item in Document 00300 "BID" addresses payment of the restoration activity. Where separate payment is allowed, the following methods of payment shall apply.

4.2 Asphaltic Cement Pavement and Concrete Pavement:

Payment for the replacement of asphaltic cement pavement and concrete pavement shall be per lineal foot as measured along the pipeline for utility construction and per square yard for other construction. Payment will be under the Bid Item "Pavement Removal and Replacement".

4.3 Concrete Sidewalk:

Payment for the replacement of concrete sidewalks shall be per square foot, as measured in place. Payment will be under the Bid Item "Replacement of Concrete Sidewalk".

4.4 Concrete Curb and Gutter:

Payment for the replacement of concrete curb and gutter shall be per lineal foot as measured along the gutter line. Payment will be under the Bid Item "Replacement of Concrete Curb and Gutter".

4.5 Miscellaneous Pavement Replacement:

- A. Payment for the replacement of miscellaneous paving shall be per square yard, as measured in place. Payment will be under the Bid Item "Miscellaneous Pavement Removal and Replacement:
- B. Payment for miscellaneous pavement replacement will require written authorization prior to removal of existing paving.

4.6 Areas to Receive Gravel Surfacing:

Payment for the replacement of gravel surfacing shall be per lineal foot as measured along the pipeline for utility construction and per square yard for other construction. Payment will be under the Bid Item "Replacement of Gravel Surfacing".

4.7 Areas with Topsoil and/or Vegetation Cover:

Payment for the replacement of topsoil and/or vegetation cover shall be per lineal foot as measured along the pipeline for utility construction and per square yard for other construction. Payment will be under the Bid Item "Reseeding" or "Re-Sodding", as applicable.

END OF SECTION

SECTION 02221 EXCAVATION AND BACKFILL FOR STRUCTURES

PART 1 SCOPE OF WORK:

It is the intent of this Section for the Contractor to provide all labor, materials, equipment, and transportation necessary for the excavation, foundation preparation and backfill for all structures.

PART 2 EXCAVATION:

- 2.1 All materials designated for use for embankments and site grading shall be removed and stockpiled prior to commencement of excavating.
- 2.2 The excavation shall be of sufficient dimensions to permit the proper installation of forms, and shall be no less than 18 inches from the outside of the concrete foundation. Excavation shall not extend below the established grades unless required for foundation preparation (see Part 3 of this Section). Any excavation made below such established lines, unless required for foundation preparation shall be filled with approved, thoroughly compacted material at the Contractor's expense.
- 2.3 All waste or excess material not designated for use on the project shall be disposed of by the Contractor.

PART 3 FOUNDATION PREPARATION:

- 3.1 If unstable material is encountered at or near the foundation elevation, the Contractor shall excavate the unstable material and backfill the overexcavated area with cohesionless, free-draining material as approved by the Engineer.
- 3.2 The foundation preparation material shall be deposited in maximum 6-inch lifts and each lift shall be compacted to 95 percent (standard proctor) maximum dry density. Moisture shall be added, if necessary, to obtain the required density.

PART 4 BACKFILL:

Material used for backfilling around structures shall be free from rubbish, large stones, etc., nor will any frozen material be used. Backfill shall be compacted in maximum 6-inch lifts to not less than 95 percent of the maximum dry density (Standard Proctor ASTM D698). The Contractor shall backfill the excavation to final grade as indicated on the drawings, including importing suitable materials as necessary to replace soil lost due to compaction and other construction activities.

PART 5 TEST FREQUENCY:

At each compacted backfill layer, at least one test for every 100 feet or less of wall length, but no fewer than two tests.

PART 6 SURFACE RESTORATION:

See Section 02212

END OF SECTION

SECTION 02222 EXCAVATION, BACKFILL AND COMPACTION FOR UTILITIES

PART 1 SCOPE OF WORK:

It is the intent of this section for the Contractor to provide all labor, materials, equipment, and transportation necessary for the excavation and backfill of all pipeline trenches and appurtenances.

PART 2 GENERAL REQUIREMENTS:

- 2.1 Unless shown otherwise on the Drawings, or described in the Specifications, all excavation shall be made by open cut. The Engineer may authorize tunneling beneath driveways, crosswalks, curbing, walkways, and buried utility installation, but any such tunnels shall not exceed eight feet in length.
- 2.2 Not more than 100 feet of trench shall be opened in advance of pipe laying or more than 200 feet of trench left open behind pipe laying, unless permitted by the Engineer or as necessary for the convenience and safety of the public.

PART 3 PROTECTION OF EXISTING FACILITIES:

3.1 General:

All existing utilities and facilities, including but not limited to power, gas, telephone, cable television, sewers, water mains, cables, culverts, conduits, ditches, embankments, structures and trees within the construction area, shall be supported and protected from injury by the Contractor during construction and until completion of the work, unless removal is authorized by the Engineer or the Drawings or Specifications.

3.2 Underground Facilities:

- A. A reasonable effort has been made by the Engineer to indicate the type, size, location and number of known underground facilities on the Drawings, however, no guarantee is made as to the true type, size, location, or number of such facilities. It shall be the Contractor's responsibility to verify utilities along the route of the work. The omission from, or the inclusion of, utility locations on the Drawings is not to be considered as the non-existence of, or an absolute location of, existing underground utilities.

It is the Contractor's responsibility to contact local utility companies or call the local "digger's hotline" or similar service to have buried utilities located prior to construction.

- B. The Contractor shall locate and expose any buried facilities ahead of the normal trenching operation, including confirming size and location of piping to be connected to, so that necessary changes in pipeline location, alignment, or depth, for the pipeline under construction, or the possible relocation of existing buried facilities may be accomplished well in advance of the trenching operation. No additional payment will be allowed for exposing and locating buried facilities ahead of the normal trenching operation.
- C. The Contractor shall notify the Engineer of the existing utilities (as confirmed above), whether above-ground or underground prior to proceeding with trench excavation whenever such trenching operations are within 10 feet of the possible location of any existing utility. Should any such utility be damaged in the trenching operations, the Contractor shall immediately notify the Owner of such utility, and unless authorized in writing by the Utility, the Contractor shall not attempt to make repairs.
- D. Any written authorization given to the Contractor by the utility for making repairs, shall be so worded as to save harmless the Owner and Engineer of any responsibility relative to the adequacy of the repairs.
- E. If it is determined during construction that it will be necessary to relocate any above or below ground utility, including drainage structures, the Contractor shall notify the Engineer of such utility, well in advance, so that changes and/or relocation can be made without delaying the work.

PART 4 TRENCH WIDTH:

- 4.1 The minimum clear trench width as measured at the top of the pipe barrel shall be no less than the outside diameter, plus 16-inches. For all pipe diameters, the maximum clear trench measured at a point of 12-inches above the top of the pipe barrel shall be not greater than the trench width shown in the following table:

MAXIMUM TRENCH WIDTH TABLE

<u>Pipe Diameter Inches</u>	<u>Pipe Trench Inches</u>	<u>Pipe Diameter Inches</u>	<u>Pipe Trench Inches</u>
4	24	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

- 4.2 The excavation in streets with permanent paving, such as asphalt or concrete must be confined to a minimum width. The pavement shall be cut with a vertical face 6-inches beyond the top of each trench wall and on a straight line.
- 4.3 If the above stated maximum trench widths are exceeded, either through accident or otherwise, and if the Engineer determines that resultant backfill conditions will exceed or approach the design loading of the pipe, the Contractor will be required to make such corrective measures as cradling the pipe in concrete, using a pipe of a stronger class, if such be available, or provide special bedding material as determined necessary by the Engineer.
- 4.4 The cost of remedial measures because of exceeding the maximum allowable trench width shall be entirely at the Contractor's expense.
- 4.5 The Contractor may slope or bench the trench side walls as he/she deems necessary in accordance with good safety practices. The sloping or benching shall terminate not less than one foot above the top of the pipe barrel, and from that point down the trench wall shall be vertical.
- 4.6 All of the trenching operation and the spoil bank shall remain confined to the Owner's permanent and temporary construction easements, or right-of-way.

- 4.7 A clear area shall be maintained back from the top edge of the excavation to prevent overloading and sliding or caving of the trench walls. All excavated material shall be maintained in such a manner as to minimize inconvenience to the public and adjoining property owners. All public streets shall be kept open, unless written authorization is received from the Engineer for closure. At street crossings, driveways or other places of access, the Engineer may authorize or require that trenches be bridged in a safe manner to permit access to fire hydrants and public or private properties.

PART 5 TRENCH PREPARATION:

- 5.1 The trench shall be excavated to permit the pipe to be laid to the alignment and depth as specified and shown on the Drawings. The trench wall shall be braced so that the workers may work safely and efficiently. Trench excavation and preparation shall also conform to any details or special requirements shown on the Drawings.
- 5.2 Trenches shall have extra width, when required, to permit the placing of timber supports, sheeting, and bracing, and the handling of special units if necessary. Bell holes shall be provided in the bottom of the trench at each joint to permit proper joining of the pipe.
- 5.3 After excavation, the trench bottom shall be uniformly graded and hand-shaped so that the pipe barrel (and not the pipe joint) will have uniform and continuous bearing on firm, undisturbed trench bottom, or thoroughly compacted granular material, throughout the length of the pipe barrel.
- 5.4 Final grading of trench bottom shall permit the pipe spigot end to be centered in the preceding laid pipe joint, without lifting the pipe above the final grade, and without exceeding permissible joint deflections. If it is necessary to raise the pipe subgrade, special compacted fill, approved by the Engineer, shall be used.

PART 6 BEDDING AND BACKFILLING:

For the purpose of this Section, "Pipe Bedding" shall refer to material below the pipe invert. "Pipe Backfill" shall consist of all material above the bedding to a height of 12-inches above the pipe. "Trench Backfill" shall consist of all material above the "Pipe Backfill."

6.1 Bedding:

- A. Special bedding shall be required where unstable foundation is encountered, as determined in the field by the Engineer. Special bedding shall also be required when trench excavation is in rock or sandstone.
- B. When an unstable trench bottom is encountered, the Contractor shall over-excavate a minimum of 6-inches and replace such over-excavated material with $\frac{3}{4}$ -inch "minus" crushed stone.
- C. When the trench bottom is rock, sandstone or hardpan, the Contractor shall over-excavate and/or remove sufficient material to provide a minimum of 4-inches of embedment cushion on each side of and below the pipe and appurtenances. The embedment cushion shall be granular material with no particles larger than $\frac{3}{4}$ -inch.
- D. No additional payment for "pipe bedding" shall be allowed, unless an item is listed specifically in the Bid for "pipe bedding," and its use is specifically authorized by the Engineer. Payment, if allowed, shall be based upon the volume of material placed as measured along the length of the pipeline being installed, by the depth of the material as authorized by the Engineer and by the width of the trench as shown in the "Maximum Trench Width Table" in Part 4 of this Section.

6.2 Pipe Backfill:

- A. For backfilling around the pipe; suitable materials, taken from the excavated trench and containing no stones larger than as listed following shall be used:

<u>Type of Pipe Installed</u>	<u>Maximum Size of Stones in Backfill around Pipe</u>
Ductile-Iron	2-inches
Concrete	1-inch
P.V.C.	$\frac{3}{4}$ -inch

- B. Special care shall be taken to compact the "pipe backfill" under the pipe "haunches"; between the springline (pipe centerline) and the pipe barrel where it comes in contact with the trench bottom. The first lift shall not be above the pipe spring line.

- C. Compaction bars or other pneumatic or mechanical units shall be used, which can thoroughly compact the material to 95% maximum dry density (Standard Proctor), or greater. Non-cohesive soils not applicable to Standard Proctor Density testing shall be compacted to 70% density as determined by ASTM 4253 & 4354.
- D. If sufficient suitable backfill material (for placement within 12-inches of the pipe barrel) is not available from the excavated material, the Contractor shall segregate or screen out large stones, debris and other unsuitable material from the "pipe backfill" before placing and compacting; or the Contractor shall provide acceptable material from other excavations or locations of the work under this contract. No extra payment shall be made for this moving and handling of the "pipe backfill" material.
- E. If sufficient quantities of suitable material for "pipe backfill" are not reasonably available, as described in the preceding paragraph, the Contractor shall notify the Engineer. The Engineer will then locate a source of suitable "pipe backfill" material.
- F. No additional payment for "pipe backfill" material shall be allowed, unless an item is listed specifically in the Bid for "pipe backfill," and its use is specifically authorized by the Engineer. Payment, if allowed, shall be based upon the volume of material placed as measured along the length of the pipeline being installed, by the depth of the material as authorized by the Engineer and by the width of trench as shown in the "Maximum Trench Width Table" in Part 4 of this Section.

6.3 Trench Backfilling:

A. General:

- 1. Special care shall be taken when compacting over the pipe. Any damage to or movement of the pipe, as a result of the backfilling and compaction operations, shall be the responsibility of the Contractor. The backfilling and compaction shall proceed in maximum lifts of a depth to insure the specified degree of compaction based on the type of soil and the type of compaction equipment being used.

2. "Trench backfill" necessary to bring the trench to final grade shall be considered incidental to construction. This may include importing suitable materials to replace soil lost due to compaction and other construction activities.
3. No payment for additional "trench backfill" material shall be allowed unless specific circumstances do not allow the use of the existing soils as "trench backfill." The use and payment of additional "trench backfill" shall be specifically authorized by the Engineer.
4. Payment, if allowed, shall be based upon the volume of material placed as measured along the length of the pipeline being installed, by the depth of the material as authorized by the Engineer and by the width of trench as shown in the "Maximum Trench Width Table" in Part 4 of this Section.

B. Backfilling in Locations Receiving Paving Or Designated As Traffic Areas:

The maximum lift for locations receiving paving or designated as traffic areas shall not exceed six inches. Regardless of the method, all compaction shall be 95% of the maximum dry density (Standard Proctor), in accordance with ASTM Specification Designation D698. Non-cohesive soils not applicable to Standard Proctor Density testing shall be compacted to 70% relative density as determined by ASTM 4253 & 4354.

C. Backfilling in Locations Not Receiving Paving Or Designated As Traffic Areas:

1. Unless shown otherwise on the Drawings, or described in the Special Construction Provisions, all backfill shall be carefully deposited into the trench on a slope angle equal to the repose of the material in maximum one foot lifts, and allowed to flow progressively forward in such a manner as to avoid impact on the pipe. The backfill shall be compacted in maximum one foot lifts.

2. Regardless of the method of compacting, all compaction under this classification of "Backfilling in Locations Not Receiving Paving Or Designated As Traffic Areas" shall be 85% of the maximum laboratory dry density (Standard Proctor), in accordance with ASTM Specification Designation D698. Non-cohesive soils not applicable to Standard Proctor Density testing shall be compacted to 60% relative density as determined by ASTM 4253 & 4354.

PART 7 TEST FREQUENCY:

At each compacted backfill layer, at least one test for every 250 feet or less of trench length, but no fewer than two tests.

END OF SECTION

SECTION 02230 SUBGRADE PREPARATION FOR CURB, GUTTER, SIDEWALK AND STREET CONSTRUCTION

PART 1 GENERAL:

The work to be performed in accordance with the requirement of this Section consists of furnishing all material, equipment, supplies and accessories required, and of performing all labor required for subgrade for curb, gutter, sidewalk and street construction.

PART 2 DESCRIPTION:

The work of subgrade construction shall include adjusting grade lines to meet intersections, pavements, bridge ends, as required; railroad crossings or any other physical features; disposing of surplus excavated material, and such scarifying, drying, reshaping and compacting as is necessary to conform to the Plans and Specification requirements.

PART 3 CONSTRUCTION METHODS:

- 3.1 Areas to receive embankment and the top of cut areas shall first be stripped of all vegetation, organic material, all other materials that are unsuitable for use in embankment, and disposed of by the Contractor at his expense. Embankments shall be constructed in accordance with the Nebraska Department of Roads Standard Specification 205 for Class "II" Embankments or Wyoming Highway Department Specification Section 203 "Excavation and Embankment."
- 3.2 Within the limits of the embankment and cut area, and all other areas to receive asphalt or concrete pavement, curb and gutter, the subgrade shall be scarified to a depth of six (6) inches and the moisture content increased or reduced as necessary to bring the moisture to optimum. This scarified layer shall then be compacted. The remainder of the embankment volume shall then be constructed of suitable material at optimum moisture content and compacted in lifts not to exceed six (6) inches to the relative compaction specified. No direct payment will be made for water applied.
- 3.3 Fill material and the top six (6) inches in cut areas under paved areas shall be compacted to 95% Proctor Density at optimum moisture. Compacted subgrade ready to receive base material shall conform to the lines, grades and cross-section called for on the drawings. Sub-grade is to be established by survey.

- 3.4 No curb, gutter, sidewalk, cross pan, base course or asphaltic concrete is to be placed on unstable, soft, spongy or frozen subgrade. Unstable, soft or yielding subgrade shall be scarified, aerated, moisture-adjusted and relayed to the compaction specified; or, if such relaying, moisture adjustment and compaction does not result in a stabilized subgrade, or if the depth of unstable material exceeds the specified 6-inch depth for normal subgrade preparation, then the subgrade material shall be excavated, removed and replaced with base course material as necessary to stabilize the subgrade, or as directed by the Engineer.
- 3.5 No additional payment shall be made for re-working of the subgrade to a depth of 6 inches, as specified herein, to obtain the proper compaction.
- 3.6 Additional payment for over-excavation of unstable subgrade, replacing with base course material, including compaction of base course material and other requirements stated in this Section, shall be made in accordance with the unit prices listed in the Bid. The unit price for this work shall also include the cost of removing and disposing of the unstable material.

PART 4 EQUIPMENT:

- 4.1 Compacting equipment and methods, which will consistently produce the compaction specified throughout the depth of the lifts, shall be used. Compacting equipment which will produce a smooth, glossy surface or produces detrimental laminations within the compacted lifts will not be permitted.

PART 5 TEST FREQUENCY:

At subgrade and at each compacted fill layer, at least one test for every 2,000 sf or less of paved area, but in no case fewer than three tests.

END OF SECTION

SECTION 02233 **BASE COURSE FOR CURB, GUTTER, SIDEWALK AND STREET CONSTRUCTION**

PART 1 **GENERAL:**

This Section shall govern all labor, material, equipment and services necessary for the construction of base courses composed of granular materials constructed on a prepared subgrade or underlying course, as specified on the Plans, or as directed in the field by the Engineer.

PART 2 **MATERIAL:**

- 2.1 The base material shall consist of hard durable particles or fragments of granular aggregates. This material will be mixed or blended with fine sand, clay, stone dust, or other similar binding or filler materials produced from approved sources. This mixture must be uniform and shall comply with the requirements of this Section as to gradation, soil constants, and shall be capable of being compacted into a dense and stable base. The material shall be free from vegetable matter, lumps, or excessive amounts of clay, and other objectionable or foreign substances. Pit-run material may be used, provided the material meets the requirements specified.

TABLE 2.1 - GRADATION REQUIREMENTS

Sieve Designation (Square Openings) As Per AASHTO T11 and T27		Percentage by Weight Passing Sieves
3-inch	100
No. 10	20 - 100
No. 40.	5 - 60
No. 200	0 - 15

- 2.2 The portion of the material passing the No. 40 sieve shall have a liquid limit of not more than 25 and a plasticity index of not more than 6 when tested in accordance with AASHTO T 89 and T 90. The maximum amount of material finer than 0.02 mm. in diameter shall be less than 3%.

PART 3 EQUIPMENT:

It shall be the Contractor's responsibility to provide adequate equipment to perform the necessary work described in this Section.

PART 4 PREPARATION OF MATERIALS:

- 4.1 When the entire base material is secured in a uniform and satisfactory condition and contains approximately the required moisture, such approved material may be moved directly to the spreading equipment for placing. The material may be obtained from gravel pits, stockpiles, or may be produced from a crushing and screening plant with the proper blending. The materials from these sources shall meet the requirements for gradation, quality, and consistency.
- 4.2 It is the intent of this Section to secure materials that will not require further mixing. The moisture content of the material shall be approximately that required to obtain maximum density. Any minor deficiency or excess of moisture may be corrected by surface sprinkling or by aeration. In such instances, some mixing or manipulation may be required, immediately preceding the rolling, to obtain the required moisture content. The final operation shall be blading or dragging, if necessary, to obtain a smooth uniform surface, true to line and grade.
- 4.3 When materials from several sources are to be blended and mixed, the material shall be processed in a central or travel mixing plant. The base material together with any blended material, shall be thoroughly mixed with the required amount of water. After the mixing is complete, the material shall be transported to and spread on the underlying course without undue loss of the moisture content.

PART 5 PLACING OF MATERIAL:

- 5.1 The base course shall be constructed in layers. Any layer shall not be less than 2 inches nor more than 8 inches of compacted thickness. The material, as spread, shall be of uniform gradation with no pockets of fine or coarse materials. The base, unless otherwise permitted by the Engineer, shall not be spread more than 2,000 square yards in advance of the rolling. Any necessary sprinkling shall be kept within this limit. No material shall be placed in snow or on a soft, muddy, or frozen course.

- 5.2 During the placing and spreading, sufficient caution shall be exercised to prevent the incorporation of subgrade, shoulder or foreign material in the base course mixture.

PART 6 FINISHING AND COMPACTING:

- 6.1 After spreading or mixing, the base material shall be thoroughly compacted by rolling and sprinkling, when necessary. Sufficient rollers shall be furnished to adequately handle the rate of placing and spreading of the base course.
- 6.2 Rolling shall progress gradually from the sides to the center of the lane under construction, or from one side toward previously placed material, by lapping uniformly each preceding track by at least 12 inches. The rolling shall continue until the material is thoroughly set and stable, and the base material has been compacted to not less than 98% of maximum density at optimum moisture. Blading and rolling shall be done alternately, as required or directed, to obtain a smooth, even, and uniformly compacted base.
- 6.3 The course shall not be rolled when the underlying course is soft or yielding or when the rolling causes undulation in the base. When the rolling develops irregularities that exceed ½ inch when tested with a 16-foot straightedge, the irregular surface shall be loosened and then refilled with the same kind of material as that used in constructing the course and again rolled as required above. Unstable subgrade material that is encountered shall be over-excavated and the over-excavation filled with the base course material and compacted, as directed by the Engineer.
- 6.4 Along places inaccessible to rollers, the base material shall be tamped thoroughly with mechanical or hand tampers.
- 6.5 Sprinkling during rolling, if necessary, shall be in the amount and by the equipment approved by the Engineer. Water shall not be added in such a manner or quantity that free water will reach the underlying layer and cause it to become soft.

PART 7 PROTECTION:

Work on base course shall not be conducted during freezing temperature nor when the subgrade is wet. When the base material contains frozen material or when the underlying course is frozen, the construction shall be stopped.

PART 8 TEST FREQUENCY:

At subgrade and at each compacted fill layer, at least one test for every 2,000 sf or less of paved area, but in no case fewer than three tests.

END OF SECTION

SECTION 02516 CONCRETE SIDEWALK

PART 1 GENERAL:

The work to be performed in accordance with the requirements of this Section consists of furnishing all materials, equipment, supplies, and accessories required, and of performing all operations needed in connection with the construction of Concrete Sidewalks under this contract.

PART 2 MATERIALS:

Concrete for construction of sidewalks shall conform to the requirements of Division 3 "Concrete".

PART 3 DIMENSIONS:

- 3.1 Sidewalks shall be a minimum of five (5) inches thick, except where the sidewalk also serves as a driveway approach, in which case the sidewalk shall be a minimum six (6) inches thick.
- 3.2 Sidewalks shall have a minimum slope of 1% toward the top of the existing or proposed curb. If no curb exists or is proposed, the sidewalk shall slope toward the traveled way.
- 3.3 Sidewalk width shall be as shown on the Drawings.

PART 4 SUBGRADE:

Subgrade preparation shall be in accordance with Section 02230 "Subgrade Preparation for Curb, Gutter, Sidewalk and Street Construction".

PART 5 JOINTS:

5.1 Expansion joints:

Expansion joints shall be 1-inch premolded expansion joint filler. Joints shall be placed where sidewalk ends at the curb returns, between sidewalks, driveways and where adjacent to the curb, and at all construction joints/cold joints. Maximum distance between expansion joints shall be 150-feet.

5.2 Contraction joints:

Contraction joints shall be installed at intervals not to exceed 5 feet and shall be at least 1/4 the thickness of the sidewalk or 1 inch in depth, whichever is greater. These joints shall be cut to insure free movement of the concrete at the joint.

5.3 Joint Sealant:

Joint sealing filler shall be installed over all expansion material and shall be a one-part, pourable polyurethane sealant, limestone in color, meeting the requirements of ASTM C-920-86, Type S, Grade P, Class 25 and ASTM C 920, Type S, Grade P, Class 25, Use T, M. Filler shall be similar and equal to that of MasterSeal SL-1 as manufactured by BASF Construction Chemicals, Shakopee, MN.

PART 6 PLACEMENT AND FINISH:

In depositing concrete against the forms, care shall be taken to work the fine portions of the aggregate surface so as to leave the surface in a uniform and smooth condition. The concrete shall be tamped or worked sufficiently to produce a dense mass. After tamping has been completed, the surface shall be struck off with a straightedge. When the concrete has set sufficiently, the surface shall first be troweled, then broomed with a fine hair push broom at right angles to the centerline of the sidewalk.

PART 7 TOLERANCE:

The top face of the slab shall not vary from the true grade and alignment by more than 1/4-inch in ten (10) feet when checked with a straightedge.

PART 8 CURING AND PROTECTION:

The concrete shall be protected and cured as specified in Division 3 "Concrete".

PART 9 MEASUREMENT:

The quantity to be paid for shall be the actual superficial exposed surface area, complete in place and accepted and adjusted for any deficiencies in thickness.

PART 10 QUALITY CONTROL TESTING:

Obtain one composite sample for each 2,500 square foot or fraction thereof of each concrete mixture placed each day.

END OF SECTION

SECTION 02616 PIPELINE MATERIALS - CORRUGATED POLYETHYLENE PIPE

PART 1 SCOPE OF WORK:

This Section covers corrugated polyethylene pipe. It is the intention of this Specification for the Contractor to furnish all equipment and labor to perform the construction activities described following:

PART 2 MATERIALS:

- 2.1 The 4 to 60-inch pipe shall have a smooth interior and annular exterior corrugations shall meet the requirements of ASTM F2648 and shall be watertight according to the requirements of ASTM D3212.
- 2.2 Material for pipe production shall be an engineered compound of virgin and recycled high-density polyethylene conforming with the minimum requirements of cell classification, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%.
- 2.3 Pipe shall be joined using a bell & spigot joint meeting ASTM F2648. The joint shall be soil-tight and gaskets shall be made of polyisoprene meeting the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris.
- 2.4 Fittings shall conform to ASTM F 2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the watertight joint performance requirements of ASTM F 2306. Fittings shall be furnished according to the size and gauge designated on the plans or in the Special Construction Provisions.
- 2.5 Virgin material for the corrugated polyethylene pipe shall be high-density polyethylene conforming with the minimum requirements as defined in ASTM D3350.
- 2.6 The pipe shall be similar and equal to ADS N-12 WT IB pipe.

PART 3 INSTALLATION:

Installation shall be in accordance with: Section 02723 – Storm Sewer Pipeline Installation; manufacturer's published installation guidelines; and ASTM D2321.

END OF SECTION

SECTION 02721 STORM DRAINAGE INLETS (CONCRETE)

PART 1 SCOPE OF WORK:

This Section shall govern the construction of storm drainage inlets. Inlets shall be located as shown on the Drawings, or as directed in the field by the Engineer. Detailed requirements for the construction and installation of inlets are shown on the Drawings, on the detail drawings and as specified following. Submittals shall be required for a grates and frames specified herein.

PART 2 INLET CONSTRUCTION:

- 2.1 The contractor may elect to construct inlets in accordance with one of the following methods.
 - A. Monolith pre-cast inlet.
 - B. Pre-cast base with poured-in-place or solid block walls.
 - C. Poured-in-place base with poured-in-place or solid block walls.
- 2.2 Inlets shall be constructed of pipe or concrete with smoothed to rounded even surfaces from invert to pipe spring line, thoroughly cleaned and free from any accumulation of silt, debris, or foreign matter at the time of final inspection.
- 2.3 Pre-cast bases shall be 4-inches thick, reinforced with W2.9 x W2.9 6x6 wire mesh. Poured-in-place bases shall be 4-inches thick with a thickened edge of 5-6 inches. Poured-in-place bases may be formed with 2x6 exterior forms and poured directly on the soil.
- 2.4 Solid block shall be laid in a full bed of mortar. Block and/or pre-cast sections shall be laid in a full bed of mortar in order to accurately install castings to grade.

PART 3 MATERIALS:

3.1 Concrete:

All concrete shall meet the requirements of Division 3, "Concrete". Inlet brick shall be solid, and shall conform to the requirements of ASTM.

3.2 Concrete Mortar:

Mortar shall be composed of one (1) part type II cement to two (2) parts sand, thoroughly mixed dry and then having only that amount of water added and mixed to form a paste of workable consistency. Mortar shall be freshly made and used within 2 1/2 hours of initial mixing: no mortar or grout will be used after it has begun to set.

3.3 Inlet Grate and Frame:

Inlet grates and frames shall be grey cast iron conforming to ASTM Designation A-48, free from cracks, holes, swells, cold joints, and having a smooth workmanlike finish. Frames shall be set in a full bed of mortar. Grates and frames shall be manufactured by Deeter Foundry or Neenah Foundry and shall be as indicated on detail drawings

END OF SECTION

SECTION 02723 STORM SEWER PIPELINE INSTALLATION

PART 1 GENERAL:

The work to be performed in accordance with the requirement of this Section consists of furnishing all material, equipment, supplies, and accessories required, and of performing all labor required for installation of sewer pipelines under this Contract.

PART 2 HANDLING OF MATERIAL:

- 2.1 Hoists or skidways shall be used for loading and unloading pipe, fittings, manhole rings, manhole frames and covers and all other accessories so as to prevent damage of these items. Under no circumstances shall any material be dropped. Material skidded or rolled from a vehicle shall not be rolled against pipe or fittings already on the ground.
- 2.2 Pipe and fittings shall be handled so that the coating and lining will not be damaged. If however, any part of the coating or lining is damaged, repair or replacement shall be by the Contractor at his expense in a manner satisfactory to the Engineer.
- 2.3 In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench.

PART 3 INSTALLATION:

- 3.1 Excavation and backfill shall be performed by the Contractor in accordance with Section 02222, Excavation, Backfill and Compaction for Utilities.
- 3.2 Pipe laying shall proceed with the bell end facing in the direction of laying which shall proceed upgrade.
- 3.3 Pipe joints shall not be deflected.
- 3.4 Each joint bell and spigot shall be thoroughly cleaned and the spigot end lubricated using the manufacturer-supplied lubricant.
- 3.5 All pipe and fittings shall be carefully examined for cracks and other defects when suspended above the trench, immediately before installation.

- 3.6 Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. As each length of pipe is placed in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade.
- 3.7 Under no condition shall pipe fittings be dropped into the trench.
- 3.8 The cutting of pipe shall be done in a neat and workmanlike manner without damage to the pipe and so as to leave a smooth end at right angles to the axis of the pipe.
- 3.9 Corrugated Polyethylene Pipe:
- A. Installation shall be in accordance with manufacturer's published installation guidelines and ASTM D2321 "Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications" with the exception that minimum cover in trafficked areas for 4-inch through 48-inch diameter shall be 1-foot and for 60-inch pipe the minimum cover shall be 2-feet.
 - B. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.
 - C. Pipe shall be installed without deflection between joints. Pipe sections may be deflected 3° (maximum) at coupling bands and 1° - 1.5° (maximum) at bell & spigot joints.

PART 4 TESTING HDPE PIPELINES:

4.1 Deflection Test:

- A. The Engineer will inspect the sewer pipeline for any displacement of the pipeline after the trench backfill has been in place for at least 30 days. A rigid ball or mandrel, with a diameter equal to 95% of the inside diameter of the pipe, shall be passed through the pipe.

Pipe Size (Nominal) <u>Inches</u>	Rigid Ball/Mandrel Diameter <u>Inches</u>
6	5.62
8	7.52

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10	9.41
12	11.19
18	16.75
21	19.74

- B. Failure of the ball or mandrel to successfully pass through the pipe shall constitute failure of the deflection test. Any sections of the pipe found to be deformed shall be replaced at no cost to the OWNER. No mechanical pulling devices may be used in the test.

END OF SECTION

SECTION 02832 FENCING - CHAIN LINK

PART 1 GENERAL:

The work to be performed in accordance with the requirement of this Section consists of furnishing all material, equipment, supplies, and accessories required, and of performing all labor required for installation of all fencing under this Contract.

PART 2 MATERIALS:

2.1 Fabric:

- A. Chain link fabric shall be 9-gauge commercial quality steel, and be zinc coated by the hot-dip process in roll form. Minimum coating thickness shall be 1.0 ounce per square foot as determined by ASTM A-90.
- B. Wire mesh shall have 2-inch mesh. Fabric shall be free from excessive roughness blisters and ammoniac spots, bruises or flaking. Fabric shall be knuckled.

2.2 Posts and Top Rail:

- A. All pipe for fencing shall be cold-rolled, high yield strength steel pipe, galvanized at 1.0 ounces per square foot. Pipe shall have a minimum yield strength of 50,000 psi. Pipe shall be similar and equal to CMT-40 as manufactured by Century Tube Corp., Pine Bluff, AR. or SS-40 as manufactured by Allied Tube & Conduit, Fence Div. Harvey, IL.
- B. All line posts shall be 1 7/8-inch diameter with a spacing of 10 feet, on center for fences 6-feet tall or less. Line posts shall be 2 3/8-inch on fences taller than 6-feet.
- C. All corner posts shall be 3-inch diameter. For fences on baseball/softball fields six feet and taller, 3-inch posts shall be placed every 30 feet, on center.
- D. Top rails shall be 1-5/8-inch in diameter.

2.3 Bottom Wire:

- A. Bottom tension wires shall be 6 gauge spiral vinyl-coated. Tension wires shall be attached to each line post.

2.4 Gates:

- A. Gates shall have a 2-inch diameter frame all around the gate perimeter. Gates shall not have any gaps greater than 2-inches.
- B. Gate posts shall be 3-inches in diameter for fences less than 6-feet tall and 4-inch if taller than 6-feet.
- C. Gate fabric shall match the fence fabric and shall be installed at the factory by means of heavy stretcher bars and pressed steel stretcher bar bands.

PART 3 INSTALLATION:

3.1 Posts:

- A. All posts shall be anchored in concrete as shown on the detail drawing. The concrete used to anchor posts shall be a minimum five sacks of cement per cubic yard and shall have a minimum compressive strength of 2800 psi at 28 days.
- B. All corner and end posts shall have 1-5/8-inch diameter horizontal brace posts with 3/8-inch truss rod assemblies. Fences taller than 8-feet and taller shall have a 1-5/8-inch center rail for support.

END OF SECTION

SECTION 02930 SEEDING

PART 1 SCOPE OF WORK:

The work to be performed in accordance with the requirements of this Section consists of furnishing all materials, equipment, supplies and accessories necessary; and of performing all operations needed in connection with the seeding as described on the Drawings or detailed in the Specifications.

PART 2 SUBMITTALS:

Submit seed species with manufacturer's certification of the percent guaranteed purity and germination. Mulching methods and materials shall also be submitted.

PART 3 MATERIALS:

3.1 The seed shall be furnished in bags or containers clearly labeled to show name and address of the supplier, seed name and variety, lot number, net weight, the percent guaranteed purity and germination and the calculated PLS (Purity x Germ = PLS). Any seed which has become wet, moldy or otherwise damaged in transit or storage shall not be acceptable.

3.2 The following chart shall be used in seed mixture selection:

<u>Seed Species</u>	<u>Variety</u>	<u>Rate PLS</u> <u>lbs/1,000 Square Feet</u>
Rocky Mountain Bluegrass Blend	Jirdon	3

3.3 Location:

All grass areas disturbed by construction traffic, or construction activities, where the naturally existing ground cover has been disturbed during construction and where as other surface restoration is specifically detailed on the Drawings or in the Specifications.

PART 4 SEEDING DATES:

Cool Season Grasses:

Spring Seeding

March 1 - April 30

Fall Seeding

August 15 - September 30

Dormant

December - April 15

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Warm Season Grasses:

Spring Seeding	June 1 –July 15
Dormant	After October 15

NOTE: Mulching will be required for all fall or dormant seeding dates.

PART 5 FERTILIZING:

- 5.1 Fertilizer shall be a synthetic organic, or inorganic product containing nitrogen, or phosphoric, or potassium or any combination of the three in a recognized plant food forms, equal to Starter (N15 P30 K15). 90% Elemental Sulfur shall also be provided.
- 5.2 Fertilizer shall be furnished and delivered in standard weight bags or bulk. Every load of bulk fertilizer delivered to the project shall carry, for delivery to the Engineer, a "Fertilizer Certification" form.
- 5.3 The fertilizer shall be applied with approved mechanical spreaders or with a hydraulic seeder, at the rates specified and shall uniformly cover the entire area. Any fertilizer blending shall be done under the supervision of the Engineer. The fertilizers shall be incorporated into the soil prior to seeding at the following rates:

Elemental Sulfur	50lbs/10,000 Square Feet
Starter	8lbs/1,000 Square Feet

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PART 6 SEEDING:

- 6.1 Seed shall be incorporated into a firm level seed bed by:
 - A. A drill designed especially for seeding grass with double disc openers and packing wheels for Low Profile, Wheat, and Buffalograss, matching grasses, Monument Blend.
 - B. Bluegrass shall be broadcast and harrowed in and packed.
- 6.2 Drills shall be at maximum 7-inch spacing. Seed shall have a minimum of 1/8-inch solid cover and a maximum depth of 1/4-inch. All drilled seed shall be placed with crossing pattern.
- 6.3 It is the responsibility of the Contractor to seed the required areas and establish a good living stand of grass over a 3-4 week period. The Contractor shall be responsible for maintenance of the seeding, including watering, until final acceptance of the project or a minimum of 45 days after planting.

PART 7 MULCHING:

- 7.1 Mulching shall be either dry cured native (prairie) hay or threshed grain straw free of noxious weeds. Hay or straw in an advanced stage of decomposition so as to "powder" in the mulch blower shall be rejected.
- 7.2 The Contractor shall apply the mulch within 24 hours after planting the seed. The mulch shall be applied with a mulch blowing machine at the specified rate.
- 7.3 Immediately following the spreading of the mulch, it shall be anchored to the soil by a mulch crimper or other approved equipment with dull blades without camber.
- 7.4 Rates:
 - A. Mulching shall be distributed evenly on all areas at the rate below:

Dry cured hay-	1 ½ Ton per acre
Grain straw-	2 Ton per acre
 - B. Mulching methods and materials shall be in accordance with U.S. Soil Conservation Service recommended methods.

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- 7.5 All areas seeded shall be mulched unless otherwise determined by the Engineer.

END OF SECTION

Seeding

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SECTION 03100 CONCRETE FORMWORK:

PART 1 INSTALLATION OF FORMS:

Forms shall be free of surface defects and shall conform to the lines, grades and shapes as shown on the Drawings. The forms shall be joined together sufficiently tight to prevent leakage and so that they maintain the intended shape. Snap ties shall be used. Holes resulting from snapping ties shall be grouted for a flush, smooth concrete surface. Plywood or steel, oiled with a nonstaining oil shall be used for exposed concrete.

PART 2 REMOVAL OF FORMS:

The forms shall not be removed until the concrete has developed sufficient strength to safely support its weight and the load thereon. The Contractor shall be responsible for the determination of sufficient strength for form removal. Any concrete damaged by premature form removal shall be replaced by the Contractor without additional cost to the Owner.

END OF SECTION

SECTION 03210 REINFORCING STEEL

PART 1 Reinforcement shall be new, deformed billet steel, grade 60 for No. 4 bars or larger and grade 40 for No. 3 bars. All reinforcement shall be in accordance with ASTM A615.

PART 2 Metal reinforcement surfaces shall be clean prior to concrete placement and free of rust, scale and other coatings that will destroy or reduce the bond. Bar bends shall be around a pin having a diameter not less than six times the thickness of the bar, except that for bars larger than 1-inch, the pin shall be a minimum of eight times the thickness of the bar. All bars shall be bent cold.

PART 3 Placing of Reinforcement

3.1 Metal reinforcement shall be placed accurately in accordance with the Drawings and shall be secured by concrete or metal chairs and spaces.

3.2 Splices and laps of reinforcement shall conform to ACI Specification 318 and shall be made where indicated on the Drawings.

PART 4 Concrete Protection for Reinforcement:

The metal reinforcement shall be protected by the thickness of concrete shown on the Drawings. If the thickness is not indicated on the Drawings, the concrete cover shall conform with the requirements of ACI Specification 318.

END OF SECTION

SECTION 03310 STRUCTURAL CONCRETE

PART 1 MATERIALS:

1.1 Cement:

All cement used under this Contract shall be Type 1PF, 1PN, I/II, Portland cement.

Mixes with Type 1PF and 1PN are pre-blended or interground with Class F fly ash or Class N Pozzolan by the cement mill producer at a rate of 25%±2%, no additional Class F fly ash or Class N Pozzolan is added at the batch plant. Lithium Nitrate may be used in place of Class F fly ash or Class N Pozzolan.

Type 1PF or 1PN shall be a Type 1P made exclusively with Class "F" fly ash or Class N as the pozzolan. Type 1P cement shall conform to the requirements as prescribed in ASTM C 595 and the following requirements:

- a. The fly ash or pozzolan content shall be 25±2 percent of the cementitious materials by weight.
- b. The material shall be Class F fly ash or Class N pozzolan.
- c. Additional fly ash substitution shall not be allowed with Type 1P cement containing Class F fly ash or Class N pozzolan.

1.2 Aggregates:

The quality of Concrete aggregates shall be in accordance with ASTM C33. The grading of Concrete aggregates shall be in accordance with Section 03313, Part 3, Item 2.2.

1.3 Water:

Water used in mixing of concrete shall be clean water, free from oil, acids, alkali or organic material.

PART 2 STORAGE OF MATERIALS:

2.1 Cement:

Storage of cement shall be such that deterioration and contamination will be avoided. Caked, partially set, contaminated or damaged cement shall be rejected.

2.2 Aggregates:

Gradation and cleanliness of the aggregates shall be preserved through proper storage.

PART 3 QUALITY:

3.1 Compressive Strength:

All concrete shall develop the minimum compressive strengths at 28 days as indicated in Section 03313.

3.2 Concrete Admixtures:

A. Calcium Chloride:

Due to its effect on shrinkage and its susceptibility to sulfate attack, calcium chloride shall not be used without written permission from the Engineer.

3.3 Slump:

Concrete slump shall be as required in Section 03313 (Concrete Mix Design).

3.4 Batching:

Batching shall be conducted so that the weight of each material required is within a tolerance of 1% for cement and 2% for aggregates. Water may be measured either by volume or by weight. The accuracy of measuring the water shall be within 1% of required amounts.

Detailed batch tickets shall be submitted with each truck giving an itemized listing of the actual mix proportions for that truck.

3.5 Time of Haul:

Concrete transported in truck mixers or truck agitators shall be delivered to the work site and completely discharged within a period of ninety (90) minutes after the cement comes in contact with the mixing water or with the combined aggregates when the combined aggregates contain free moisture in excess of 2% by weight.

3.6 Production and Delivery:

- A. The production and delivery of ready-mixed concrete shall be such that placing and finishing shall be continuous insofar as the operations require.
- B. When an increase in the water-cement ratio is required, the concrete frame shall be rotated at a rate of 20 RPM for not less than three (3) minutes after the water has been added.

END OF SECTION

SECTION 03311 CONCRETE MIXING, MOVING AND TESTING

PART 1 MIXING OF CONCRETE:

- 1.1 All mixing equipment shall be clean before mixing concrete and each batch shall be completely discharged before the mixer is re-charged. The concrete shall be mixed until the materials are uniformly distributed throughout.
- 1.2 Ready-mixed concrete shall conform to ASTM Specifications for mixing and delivering ready-mixed concrete (C 94).

PART 2 PLACING OF CONCRETE:

- 2.1 Each section to be poured shall be concreted as one continuous operation. The concreting shall be carried out at a rate which keeps the concrete plastic. Concrete that is partially hardened or that contains foreign material shall not be used. Surfaces upon which concrete is to be placed shall be moistened prior to placing concrete.
- 2.2 All concrete shall be consolidated by vibration, spading or rodding to eliminate air or stone pockets which may cause honey-combing or planes of weakness.
- 2.3 Construction, contraction and expansion joints shall be in accordance with the Specifications, as shown on the Drawings or as directed by the Engineer. If joints are required, but not specified or shown on the Drawings, the joints shall be located as to least impair the strength of the structure.

PART 3 CONCRETE TESTING:

- 3.1 The Engineer may secure concrete for compression tests at any time during the progress of work. The test specimens shall be cured in accordance with ASTM Standard Method of Making and Curing Concrete Compression and Flexure Test Specimens (C31). The specimens will be cured under laboratory conditions unless the Engineer deems it necessary to cure additional specimens under job conditions.
- 3.2 All concrete that fails to conform to Specifications shall be removed and replaced by the Contractor at no additional cost to the Owner.

END OF SECTION

SECTION 03313 CONCRETE MIX DESIGN

PART 1 GENERAL:

The Contractor shall submit the proposed concrete mix design to the Engineer in writing prior to the placement of any concrete.

PART 2 MIX DESIGN:

2.1 Structural, Pavement (Exterior *and* Interior), Pathways/Trails, and Curb & Gutter Concrete, 3,500 psi

- A. The concrete mix, including aggregate gradations and testing requirements, shall meet the following proportions:

Type of Cement	1PF/1PN
Lbs of Cement/Fly Ash or Pozzolan	423/141
Lbs. of Cementitious Material per Cubic Yard (Min.)	564
Water/Cement Ratio (Max.)	0.48
Air-Entrainment	6.0% - 8.5% 7.5% - 10.0% (slip forming)
Total lbs Aggregates	2850 min./3150 max.
Ratio of Coarse Aggregate to Total Aggregate	30% ±3%
Type of Coarse Aggregate	Crushed Limestone
Slump in Inches (Max.)	3

B. Aggregate Gradations:

1. Fine Aggregate:

<u>% Passing</u>	<u>Target</u>	<u>Tolerance</u>
1-inch Sieve	100	None
3/8-inch Sieve	—	—
No. 4 Sieve	87	±10
No.10 Sieve	60	±10
No.30 Sieve	28	±12
No.200 Sieve	1.5	±1.5

2. Coarse Aggregate:

<u>% Passing</u>	<u>Target</u>	<u>Tolerance</u>
1½-inch Sieve	100	—
1-inch Sieve	100	-8
¾-inch Sieve	78	±12
½ inch Sieve	—	—
3/8-inch Sieve	30	±15
No. 4 Sieve	6	±6
No. 10 Sieve	—	—
No. 20 Sieve	2 *	±2
No. 200 Sieve	1.5	±1.5

* The percent passing may be increased to 3 ±3 provided no more than 1.5% is passing the No. 200 sieve when washed.

2.2 Interior and Exterior Non-Pavement Flatwork Concrete, 3,500 psi

- A. The concrete mix, including aggregate gradations and testing requirements, shall meet the following proportions:

Type of Cement	1PF/1PN
Lbs of Cement/Fly Ash or Pozzolan	423/141
Lbs. of Cementitious Material per Cubic Yard (Min.)	564
Water/Cement Ratio (Max.)	0.48
Air-Entrainment	6.0% - 8.5%
Total lbs Aggregates	2850 min./3150 max.
Type of Aggregate	Sand-Gravel
Slump in Inches (Max.)	3

- B. Aggregate Gradations:

<u>% Passing</u>	<u>Target</u>	<u>Tolerance</u>
1-inch Sieve	100	—
3/8-inch Sieve	—	—
No. 4 Sieve	66	±22
No.10 Sieve	37	±13
No.30 Sieve	12	±8
No.200 Sieve	1.5	±1.5

2.3 Flowable Fill :

- A. The approximate quantities of each component per cubic yard of mixed material shall be as follows:

Cement (Type I or II)	50 lbs.
Fly Ash	200 lbs.
Fine Sand	2,700 lbs.
Water (Approximate)	420 lbs.
Air Content (Approximate)	10%

- B. Fine Sand Gradation:

No. 4 Sieve	At least 95% passing
No. 200 Sieve	Not more than 5% passing

2.4 High Early Concrete Mix (NDOR Type PR1) 3,000 psi in 24 hours:

- A. The concrete mix, including aggregate gradations and testing requirements, shall meet the following proportions:

Type of Cement	I/II
Lbs of Cement/Fly Ash	752/0
Lbs. of Cementitious Material per Cubic Yard (Min.)	752
Water/Cement Ratio (Max.)	0.36
Air-Entrainment	6.0% - 8.5% 7.5% - 10.0% (slip forming)
Total lbs Aggregates	2500 min./2950 max.
Ratio of Coarse Aggregate to Total Aggregate	30% ±3%
Type of Coarse Aggregate	Crushed Limestone
Slump in Inches (Max.)	7

Admixtures: Calcium chloride, NDOR Type F Water-Reducing

B. Aggregate Gradations:

1. Fine Aggregate:

<u>% Passing</u>	<u>Target</u>	<u>Tolerance</u>
1-inch Sieve	100	None
3/8-inch Sieve	—	—
No. 4 Sieve	87	±10
No.10 Sieve	60	±10
No.30 Sieve	28	±12
No.200 Sieve	1.5	±1.5

2. Coarse Aggregate:

<u>% Passing</u>	<u>Target</u>	<u>Tolerance</u>
1½-inch Sieve	100	—
1-inch Sieve	100	-8
¾-inch Sieve	78	±12
½ inch Sieve	—	—
3/8-inch Sieve	30	±15
No. 4 Sieve	6	±6
No. 10 Sieve	—	—
No. 20 Sieve	2 *	±2
No. 200 Sieve	1.5	±1.5

* The percent passing may be increased to 3 ±3 provided no more than 1.5% is passing the No. 200 sieve when washed.

END OF SECTION

SECTION 03370 CONCRETE CURING

PART 1 GENERAL:

All concrete shall be cured for a period of 7 days. Concrete shall be kept moist for at least 5 days after placement. Curing shall be accomplished by methods approved by the Engineer.

PART 2 CURING COMPOUNDS:

- 2.1 If curing compounds are used, they shall be thoroughly agitated during use and shall be uniformly sprayed in a single coat. Application shall be at a rate of 150 square feet per gallon of compound. Application shall be made as soon as all surface water sheen has disappeared from the concrete surface. If concrete surfaces become partially dry, they shall be thoroughly moistened with water immediately prior to the application of the compound. Under no circumstances shall curing compound be used on surfaces to which new concrete is to be bonded.
- 2.2 Transparent curing compounds shall conform to AASHTO M 148 Type 2, or Federal Specification TT C-800 Type 2 and meet the following requirements:
 - A. The compound shall be sufficiently transparent and free from permanent color to result in no pronounced change in color from that of the natural concrete at the conclusion of the curing period. The compound shall, however, contain a dye of color strength sufficient to render the film distinctly visible on the concrete for a period of at least four hours after application.
 - B. If at any time during the curing period any of the forms are removed, a coat of curing compound shall be applied immediately to the exposed surface.

PART 3 PROTECTION IN COLD AND FREEZING WEATHER.

- 3.1 In cold weather, concrete shall be mixed and placed only when the temperature is at least 40 degrees Fahrenheit. When the temperature may be expected to drop below 40°F during the curing period, suitable means shall be provided for mixing and maintaining the concrete at a minimum temperature of 50 degrees Fahrenheit for 7 days after placement. Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near freezing weather. Under no circumstances shall frozen materials or materials containing ice be used for the preparation of concrete. Salt, chemicals or other foreign materials shall not be mixed with the concrete for the purpose of preventing freezing. All materials, reinforcement, forms, fillers and ground which the concrete is to come in contact with shall be free from frost.
- 3.2 The housing, covering or other protection used in connection with curing shall remain in place and intact for at least 48 hours after the artificial heating is discontinued.
- 3.3 The Contractor shall be responsible for the quality and strength of the concrete placed during cold weather and any concrete injured by frost action shall be removed and replaced at the Contractor's expense.

END OF SECTION

SECTION 04220 CONCRETE UNIT MASONRY

PART 1 UNIT DIMENSIONS:

- 1.1 All concrete block shall have the following minimum dimensions:

Length	15-5/8"	
Height	7-5/8"	
Width	5-5/8" or 7-5/8"	(as required by wall thickness)
Face	1-1/4"	
Tie	1"	

- 1.2 All masonry units shall be of uniform size plus-minus 1/8". All units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or impair the strength or permanence of the construction. Minor cracks incidental to the usual method of manufacture, or minor chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed ground for rejection.
- 1.3 Where units are to be used in exposed wall construction, the face or faces that are to be exposed shall be free of chips, cracks, or other imperfections, except that if not more than 5 percent of a shipment contains slight cracks or small chips not larger than 1 inch, this shall not be deemed ground for rejection.

PART 2 BLOCK PHYSICAL REQUIREMENTS:

2.1 Compressive Strength:

Minimum compressive strength of all standard weight aggregate block shall be one thousand two hundred fifty pounds (1,250) per square inch on the gross area of the block, or twenty-five hundred pounds (2,500) per square inch on the net area. The largest of the two above figures will control. The strength will be determined as the average of five units with a minimum of eleven hundred fifty pounds (1,150) per square inch on the gross area permitted for an individual test.

2.2 Absorption:

Maximum water absorption permitted for units at the time of delivery to the job site shall be ten pounds per cubic foot (10 pcf) of concrete as an average of five units for standard weight aggregate.

2.3 Moisture Content:

Maximum moisture content permitted for standard weight aggregate units at time of delivery shall be 35 percent of total absorption and 30 percent of total absorption of lightweight aggregate units. The test for moisture content shall be determined from an average of five units at time of delivery.

PART 3 CURING:

All units shall be steam cured per accepted curing methods. Open air type curing is definitely excluded.

PART 4 COLORING:

Units shall be furnished without pigments.

END OF SECTION

SECTION 04300 MASONRY WORKMANSHIP

PART 1 CONSTRUCTION AND WORKMANSHIP:

- 1.1 All masonry walls shall be true and plumb, and built to dimensions, bond or patterns indicated on the plans. Where no bond or pattern is shown, the wall shall be laid in straight uniform course with regular bond.
- 1.2 Provisions shall be made for all special units (corners, jamb block, headers, fillers, closures and fitters, etc) as may be required to form all corners, returns, openings and offsets, and maintain a proper bond throughout the length of the wall.
- 1.3 The surfaces of the wall are to be kept clean and free of mortar splotches, and all joints are to be made with a straight, clean line.
- 1.4 Where floors or joists are supported on the masonry wall, the cores of the masonry course immediately below such bearing, shall be filled with concrete or mortar of the same quality as used for laying the wall, or a bearing course of solid masonry units (nominal 4" thickness) shall be used.
- 1.5 Pilasters and piers subjected to concentrated loading shall be constructed of solid masonry units or shall have the cores of the hollow units completely filled from the foundation to the bearing point with concrete or mortar units of same quality as used for laying the wall.
- 1.6 All openings and chases for heating, plumbing, and electrical ducts, pipes and conduits shall be built into the masonry walls as shown on the plans. Provisions shall be made for the installation of bolts, toggles, flashing beams, anchors, hangers, nailing strips, wall plugs and frames as required.
- 1.7 At the conclusion of the masonry work, the Contractor shall clean down all masonry walls, remove all scaffolding and equipment used in the work, clean up all debris, refuse and surplus material, and remove them from the premises.
- 1.8 The work of the masonry contractor shall be coordinated with that of the other trades.

PART 2 HANDLING:

Units shall be handled from storage to scaffold and during erection in such a manner as to adequately protect corners and exposed surfaces of unit from injury.

PART 3 LAYING TEMPERATURE:

Unless adequate provisions are made for heating and drying materials and for protecting the completed work for at least forty-eight (48) hours after the erection, no units shall be laid when the ambient temperature is less than forty degrees Fahrenheit (40°F). Units having a film of water or frost on their surfaces shall not be laid and no work shall proceed on frozen materials.

PART 4 PROTECTION:

Units incorporated as part of incomplete construction, not being worked on, shall be adequately protected and braced at all times during construction operations. At such time as inclement weather is imminent and/or work is discontinued, the tops of all units shall be protected with a moisture resistant cover well secured in place.

PART 5 DRYING:

- 5.1 After drying, or when units are at an approved air dry condition, they shall be protected from rain and kept dry prior to placing in the wall. Units shall be stacked on the job in such a manner that air circulation shall occur.
- 5.2 Units shall not dampened before and/or during laying in the wall. The Contractor shall be responsible for the protection necessary to prevent re-wetting of delivered units prior to placement in the wall.

PART 6 MORTAR JOINTS:

6.1 Thickness:

Unless otherwise indicated on the working drawings, and taking into account the tolerance permitted in actual dimensions of units, both horizontal and vertical mortar joints shall be three-eighths inch (3/8") thick.

6.2 Hollow Units:

Mortar bedding shall be placed under the face shell of units but shall not extend across the webs, except that full mortar bedding shall be required under the first or starting course of units laid on footings and solid foundations walls and in all courses or piers, columns, and pilasters erected to carry critical loads. Mortar shall be applied over the full thickness and height of face shells and/or the solid end faces of units to form the vertical mortar joint.

6.3 Control and Expansion Joints:

A. Form control joints with pre-formed joint filler, backer rod and sealant. Control joints shall be placed in the following locations:

1. With changes in wall heights or thickness;
2. At construction joints in foundation, roof and floors;
3. At chases, recesses for piping, columns and fixtures;
4. At the abutment of walls and columns;
5. At return angles in L, T and V shapes;
6. One side of an opening less than 6'-0" wide and on both jambs over 6'-0" wide beyond the lintels;
7. At a ratio on exterior wall of 3:1 panel length to height, with panel length not to exceed 30'-0" regardless of height;
8. Between dissimilar materials; and
9. At a minimum of 24'-0" on-center at interior walls.

PART 7 LONGITUDINAL JOINT REINFORCEMENT:

- 7.1 Joint reinforcement shall be manufactured from cold drawn steel wire conforming to "Tentative Specification for Cold Drawn Steel Wire for Concrete Reinforcement", ASTM Designation: A 82-62 T, and shall consist of two No. 9 gage deformed longitudinal side rods weld connected to No. 9 gage cross rods. The distance between the weld connection of cross rods with each longitudinal rod shall not exceed sixteen inches (16"). Spacing of side rods shall be approximately 2" less than the nominal thickness of the wall or wythe. Joint reinforcement shall be furnished in flat sections ten to twenty feet (10' - 20') in length.
- 7.2 Factory fabricated or job fabricated corner and tee sections shall be used to form continuous reinforcement around corners, and for anchoring abutting walls and partitions. Material in corner and tee sections shall correspond to type and design of reinforcement used. Unless otherwise noted, reinforcement shall be installed in the first and second bed joints, 8 inches apart immediately above lintels and below sills at openings and in bed joints at 16" intervals elsewhere. Reinforcement in the second bed joint above or below openings shall extend two feet beyond the jambs. All other reinforcement shall be continuous except that it shall not pass through vertical masonry control joints.
- 7.3 Side rods shall be lapped at least 6 inches at splices. Reinforcement shall be so placed as to assure a 5/8" mortar cover on the exterior face of walls and 1/2" mortar cover on interior faces.
- 7.4 Cavity walls and composite walls shall be reinforced and tied with joint reinforcement conforming to the above paragraphs. Cross rods shall be galvanized and shall be 3/16" in diameter except that cross rods of not less than No. 9 gage may be used when so spaced as to provide equivalent stiffness and when approved by the Building Engineer. Spacing shall be not greater than 16" o.c. vertically and in composite walls the collar joint (space between facing and backing) shall be solidly filled with mortar.
- 7.5 Walls or wythes of walls, when laid in stack bond shall be reinforced by one No. 9 gage wire or equivalent for every 6" of width of wall or wythe, with reinforcement spaced not more than 16" o.c. vertically. Single wythe walls regardless of thickness shall contain at least 2 longitudinal rods.

PART 8 VERTICAL REINFORCEMENT:

Vertical reinforcement of concrete block walls shall be no less than #4 at 48" on-center. Vertical reinforcement shall be tied to the foundation wall using 2'-6" long dowels. Fill all cores with grout containing vertical reinforcement.

PART 9 ANCHORS AND TIES:

Anchors and ties shall be hot-dipped galvanized and shall be placed at 16-inches vertically and 24-inches horizontally in masonry veneer/facing.

PART 10 TOOLING:

- 10.1 All horizontal and vertical mortar joints exposed to the elements shall be thoroughly compacted and pressed tight against the edges of units with the proper shaped tool. Joints shall be concave in shape. The tool shall be of sufficient length that a uniform straight line is formed free from waves.
- 10.2 If the wall is to be plastered, all joints shall be cut flush to provide uniform bonding surface.
- 10.3 If the masonry walls are to be painted they must be laid with extreme care to prevent mortar splashes, and to hold straight, clean mortar joints. Before painting, the walls should be rubbed with a brick to remove the protruding mortar around the joints and any other surface irregularities. Special care shall be taken to seal the wall against the entrance of moisture.

PART 11 WEEP HOLES:

Install weep holes in veneer at 24-inches on-center, horizontally above through-wall flashing, above shelf-angles and at bottom of walls. Weep holes shall be ¼-inch diameter, 100% cotton rope.

PART 12 FLASHING:

- 12.1 Flashing shall be installed where shown on the drawings. Flashing shall be 30 mil thickness and shall be of corrosion-resistance materials.
- 12.2 Extend flashing through veneer, turn up minimum 8-inches and bed into mortar joint of masonry backup. Turn up flashing at heads, etc., minimum 2-inches at end of flashing and bed in vertical joint to form a dam.

- 12.3 Lap end joints minimum 6-inches and seal watertight. Turn up end joints minimum 2-inches high.

PART 13 CAVITY WALLS:

The inner wythe shall be built ahead of the outer wythe to receive cavity insulation air/vapor barrier adhesive. Mortar shall not be allowed to drop or accumulate into cavity air space or to plug weep holes.

PART 14 CUTTING AND PATCHING:

- 14.1 Cutting of units required to accommodate the work of others and along with other necessary cutting, shall be performed by masonry mechanics. All cutting shall be done in such a manner as to insure unbroken edges cut plumb and true.
- 14.2 Chases and other cut or raked-out area shall be kept free from mortar and debris. Patching shall be kept to a minimum and, wherever necessary on exposed work, shall be carried out in such manner as to restore the original contour of the patched material in an accurate manner.

PART 15 TOLERANCES:

Construction shall conform to the following tolerances for maximum variations:

Alignment of columns:	¼-inch.
Unit to adjacent unit:	1/32-inch.
Plane of wall:	¼-inch in 10 feet; ½-inch in 20 feet or more.
Plumbness:	¼-inch per story non-cumulative; ½-inch in two stories or more.
Level coursing:	1/8-inch in 3 feet; ¼-inch in 10 feet; ½-inch in 30 feet.
Joint thickness:	1/8-inch in 3 feet.
Cross sectional thickness of walls:	¼-inch.

PART 16 POINTING AND CLEANING:

Upon completion of the work, all holes in exposed mortar joints shall be filled with fresh mortar and suitably tooled. After mortar has set and hardened, all exposed surfaces of units shall be thoroughly cleaned with stiff brushes, cleaning tools and clear water. A diluted acid may be used only upon request from the contractor and acceptance by the Owner or his representative.

END OF SECTION

SECTION 06410 CASEWORK

PART 1 GENERAL:

The work to be performed in accordance with the requirements of this Section consists of furnishing all materials, equipment, supplies and accessories required, and of furnishing all labor required for custom casework.

PART 2 PRODUCTS:

2.1 General:

A. Wood:

1. On exposed portions, provide hardwood and hardwood plywood as indicated on the drawings for natural finish.
2. On semi-exposed portions, provide the manufacturer's standard cabinet liner as approved by the Architect.

B. Finishing:

Pre-finished RTF, White in color. Or approved equal

2.2 Cabinets:

A. Raised Door Panel design, RFT Finish or approved equal.

B. Hardware:

1. Hinges: Concealed.
2. Pulls: Manufacturers standard wire pulls.
3. Drawer Guides: Heavy duty, 100% extension.

2.3 Countertops:

A. Types and sizes:

1. Shop fabricate countertops and splashes to types and dimensions shown on the Drawings.
2. Provide 4" high coved splash.

B. Stone covered countertops: Thickness and type as indicated on the drawings.

2.4 Hardware:

- A. Pulls: Wire pull or as shown on drawings.
- B. Hinges: Concealed self closing type.
- C. Drawer Guides: 100% extension, 100lb capacity.

2.5 Other Materials:

Provide other materials, not specifically described but required for a complete installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 EXECUTION:

3.1 Surface Conditions:

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 Field Measurements:

Take necessary measurements in the field to assure proper dimensions for the work of this Section.

3.3 Fabrication:

Fabricate the work of this Section in strict accordance with the approved Shop Drawings and the referenced standards.

3.4 Installation:

- A. Install the work of this Section in strict accordance with the approved Shop drawings and the referenced standards.
- B. Install the work of this section plumb, level, true and straight with no distortions. Shim as required, using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level (including countertops).
- C. Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

END OF SECTION

SECTION 08332 COUNTER DOOR

PART 1 GENERAL

The work to be performed in accordance with the requirement of this Section consists of furnishing all material, equipment, supplies and accessories required, and of performing all labor required for furnishing counter doors.

PART 2 PRODUCTS

- 2.1 Counter doors shall be R&S Manufacturing, Model SNFP, or equivalent.
- 2.2 Curtain shall be interlocking, roll formed, flat profile, type 18 with a slat pitch of 1 3/4" and a depth at crown of 9/16". Slat shall be fabricated of minimum 24 gauge stainless steel per ASTM A-525. End locks shall be attached to the end of each slat to prevent lateral movement.
- 2.3 Bottom bar shall be a stainless steel tubular member to reinforce the curtain guides.
- 2.4 Guides shall be box shape formed from stainless steel.
- 2.5 Brackets shall be of steel plate.
- 2.6 Barrel shall consist of a steel pipe housing the torsion spring assembly and supporting the curtain assembly with a maximum deflection of .03 inches per foot of width. Torsion springs shall be mounted on a continuous cold rolled sheet shaft with an adjustable tension wheel.
- 2.7 Hood shall be formed from a minimum 24 gauge stainless steel sheet, reinforced with top and bottom flanges to limit deflection.
- 2.8 Sidebolt locks shall be mounted on tubular bottom bar.

PART 3 EXECUTION

Install doors in accordance with manufacturer's instructions and standards.

END OF SECTION

SECTION 08360 OVERHEAD DOORS

PART 1 SCOPE OF WORK:

The work to be performed in accordance with the requirements of this Specification consists of furnishing and of performing all operations required to be performed in connection with overhead door installation.

PART 2 OVERHEAD DOOR:

The overhead door provided shall conform to the following construction features:

2.1 Door Sections:

Door sections shall be constructed from sheet steel, .016-inch thick, coated with a corrosion resistant coating. Sections shall be roll-formed to produce a thermal break. Sections shall be equipped with 20 gauge steel end caps for brackets and end hinge attachments. Doors (sections) over 14 feet wide shall be equipped with reinforcing struts/trusses.

2.2 Door Tracks:

Tracks shall be 3-inch steel roll-formed steel with channel to be faced with polyvinyl chloride.

2.3 Hardware:

Provide heavy-duty rollers with 10 steel ball bearings in case-hardened steel races. Provide heavy-duty roller brackets to each end reinforcement plate. Fasteners shall be galvanized steel.

2.4 Insulation:

Door shall have a full perimeter seal. Door sections shall be manufactured by a continuous foamed-in-place polyurethane lamination process to provide a homogeneous sandwich of polyurethane insulation of metal/foam/metal construction. Sections shall have U-factor of 0.088; R=11.34.

2.5 Finish:

Overhead door shall be factory prepainted with baked on polyester. Color of door shall be selected by owner.

2.6 Locks:

Overhead door shall be provided with an exterior cylinder lock. Lock shall be supplied with a construction core and core shall be compatible with the Owners standard. Owner will supply and install the permanent cores.

2.7 Weather Seals:

- A. Thermalplastic rubber tube seal shall be fitted inside every joint between the sections to prevent air infiltration. Top section of the door shall be EPDM rubber sealing strip to provide firm seal against the header when the door is in the closed position.
- B. Doors with an opening width wider than 20' shall be provided with a rubber head flexible seal fitted to an aluminum extruded strip. This flexible seal shall provide proper seal against header door frame regardless of outside/inside temperature variances.
- C. Nylon jamb seal shall be provided on the vertical angle supporting the tracks to prevent contact between conductive metal surfaces, provide seal against wind, rain and heat less and reduce friction.

1. EPDM Rubber severe Weather Blade-Type Jamb Seal:

This seal shall attach to the nylon jamb seal retainer to form a weather-tight seal against the outside skin of the door. Additionally, an exterior perimeter seal shall be included for jambs and header.

2. EPDM Double-Bottom Sealing Weatherstrip:

This combination double-flanged/"o" type bottom weatherstrip shall conform to minor irregularities in the floor.

2.8 Glazing:

- A. Standard size glazing to be 25" x 12". Glazing material shall be double thermal acrylic. Number of panes and location as indicated.
- B. Panes shall be sealed to door section by an EPDM rubber gasket attached with hot glue, to provide weather-tight sealing.

2.9 Counterbalancing System:

- A. All doors shall be equipped with helical wound torsion springs having a minimum spring life of 10,000 cycles.
- B. Spring material shall be made of high tensile music wire.

2.10 Torsion Shaft:

All doors shall be supplied with 1-inch or 1-3/8-inch solid steel shaft keyed the entire shaft length, in accordance with manufacturer's specifications.

2.11 Submittals:

A. Product Data:

Submit manufacturer's product data, roughing-in diagrams, and installation instructions for each type and size of overhead door. Include manufacturer's operating instructions and maintenance data.

B. Shop Drawings:

Submit shop drawings for special components and installations which are not fully dimensioned or detailed in manufacturer's data.

PART 3 OPERATOR:

- 3.1 Doors shall be manually opened. No electric operators are included.

PART 4 INSTALLATION:

- 4.1 Install door, track and operating equipment complete with necessary hardware, jamb and head mold stops, anchors, etc.
- 4.2 Mount counterbalance mechanism with manufacturer's fully adjustable ball bearing brackets at each end of the shaft. Furnish torsion shaft center support bearings as required for size and weight of doors. Unsupported span not to exceed 8'-0".
- 4.3 Fasten vertical track assembly to framing at not less than 24" o.c. Hang horizontal track from structural overhead framing with angle or channel hangers, welded and bolt-fastened in place. Provide sway bracing, diagonal bracing, and reinforcing as required for rigid installation of track and door operation equipment.
- 4.4 Upon completion of installation, including work by other trades, lubricate, test and adjust doors to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.

END OF SECTION

SECTION 09250 GYPSUM DRYWALL

PART 1 GENERAL:

1.1 Summary:

Work to be performed in accordance with requirements of this Section consists of furnishing material, equipment, supplies and accessories required, and of performing labor required for installation of gypsum drywall under this contract.

1.2 Submittals:

Submit product specifications and installation instructions for drywall components, including other data required to show compliance with these specifications. Reference Section 01340 - SHOP DRAWINGS, PRODUCT DATA AND SUBMITTALS.

1.3 Delivery, Storage and Handling

Deliver materials in original packages, containers or bundles bearing brand name and identification.

Store materials inside under cover, keep dry, protect from weather, other elements and damage from construction operations and other causes.

Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.

1.4 Project Conditions:

A. Environmental Requirements

Comply with requirements of gypsum board application standards and manufacturer's recommendations, for environmental conditions before, during and after application of gypsum board.

B. Cold Weather Protection

When outdoor temperature is below 55 degrees F maintain building working temperature of not less than 55 degrees F for a period of 48 hours prior to, during and following application of gypsum board and joint treatment materials or bonding of adhesives.

C. Ventilation

Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

PART 2 MATERIALS:

2.1 Gypsum Board:

Gypsum board shall be 5/8-inch thick with edges tapered for finishing. Gypsum board shall be equivalent to Georgia Pacific ToughRock Fireguard Gypsum Wallboard unless noted otherwise.

2.2 Damp Locations:

Gypsum board used in damp locations shall be equivalent to Georgia Pacific ToughRock Fireguard Moisture-Guard.

2.3 Trim Accessories:

Accessories (casing bead, corner beads, etc.) shall be galvanized steel with brads for concealment in joint compound.

2.4 Joint Treatment Materials:

Joint tape shall be perforated reinforced tape equal to Perf-A tape.

2.5 Miscellaneous Materials:

Gypsum board shall be attached with type "S" screws, shouldered, not less than 1-1/4" long, with self-tapping threads and self drilling points.

2.6 Wall Texture:

Refer to Architectural Drawings for wall textures and finishes.

PART 3 INSTALLATION:

Install gypsum board according to manufacturer's recommendations and ASTM C-840.

END OF SECTION

SECTION 09905 PAINTING - ARCHITECTURAL

PART 1 GENERAL

- 1.1 This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

A. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

- 1.2 Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from standard colors and finishes available.

- 1.3 Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

A. Labels:

Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

- 1.4 Submittals:

For each paint system specified, provide the following:

A. Material List:

Provide an inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.

B. Manufacturer's Information:

Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.

1.5 Samples for Initial Selection:

Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated. After color selection, the Architect will furnish color chips for surfaces to be coated.

1.6 Samples for Verification:

Of each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.

- A. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
- B. Provide a list of materials and applications for each coat of each sample. Label each sample for location and application.
- C. Submit Samples on the following substrates for the Architect's review of color and texture only:
 - 1. Concrete:

Provide two 4-inch- square samples for each color and finish.
 - 2. Painted Wood:

Provide two 12-inch- square samples of each color and material on hardboard.
 - 3. Stained or Natural Wood:

Provide two 4-by-8-inch samples of natural- or stained- wood finish on actual wood surfaces.

4. Ferrous Metal:

Provide two 4-inch- square samples of flat metal and two 8-inch- long samples of solid metal for each color and finish.

1.7 Source Limitations:

Obtain primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.8 Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label.

1.9 Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers in clean condition, free of foreign materials and residue. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.10 Project Conditions:

Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 PRODUCTS

2.1 Material Compatibility:

Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

2.2 Material Quality:

Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

2.3 Paint Manufacturers:

Subject to compliance with requirements, provide paint products by one of the following:

- A. Diamond-Vogel, Orange City, IA
- B. Pittsburgh Paints, Pittsburgh, PA
- C. Sherwin-Williams Co., Cleveland, OH
- D. Benjamin Moore, & Co., Montvale, NJ

PART 3 EXECUTION

- 3.1 Examine substrates, areas, and conditions under which painting will be performed for compliance with paint application requirements. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.

3.2 Coordination of Work:

Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates.

3.3 Preparation:

Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

3.4 Cleaning:

Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

3.5 Surface Preparation:

Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition.

A. Wood:

Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

1. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
2. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.
3. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.

B. Ferrous Metals:

Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations.

1. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with the same primer as the shop coat.

C. Galvanized Surfaces:

Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

3.6 Materials Preparation:

Mix and prepare paint materials according to manufacturer's written instructions:

- A. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
- B. Use only thinners approved by paint manufacturer and only within recommended limits.

3.7 Application:

Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

- A. Paint colors, surface treatments, and finishes are indicated in the schedules.
- B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
- C. Provide finish coats that are compatible with primers used.
- D. The term "exposed surfaces" includes areas visible when permanent or built-in items are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
- E. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
- F. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
- G. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

H. Sand lightly between each succeeding enamel or varnish coat.

3.8 Scheduling Painting:

Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

- A. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
- B. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
- C. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

3.9 Application Procedures:

Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

3.10 Minimum Coating Thickness:

Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

3.11 Prime Coats:

Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.

3.12 Completed Work:

Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.13 Cleanup:

At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

- A. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.14 Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

3.15 Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

- A. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.16 Paint Schedules:

Provide the following paint systems for the various substrates indicated:

Paint Schedule

New Gypsum Wallboard:

Low luster (eggshell) Paint Finish
1 coat primer prior to texture
1 coat primer after texture
2 coats low luster acrylic paint

New Gypsum Wallboard:

Semi Gloss Paint Finish
1 coat primer prior to texture
1 coat primer after texture
2 coats semi gloss acrylic-enamel paint

New Ferrous Metals:

1 coat metal primer
3 coats semi gloss acrylic-enamel paint

Interior Wood:

1 coat sanding sealer
3 coats lacquer or urethane varnish, Semi Gloss

END OF SECTION

SECTION 10800 WASHROOM ACCESSORIES

PART 1 SCOPE OF WORK:

The work to be performed in accordance with the requirements of this Section consists of furnishing all material, equipment, supplies and accessories required, and of performing all labor required for the installation of washroom accessories.

PART 2 MATERIALS:

2.1 Hand Dryers:

Hand dryers shall be recess mounted with wall box and base plate mounting. Dryers shall be fabricated from porcelain enameled cast iron fitted with integral nozzle and infrared electronic control similar and equal to Bradley #2903-28.

2.2 Stainless Steel Mirror:

Stainless steel mirrors for mounting above lavatories shall be type 304 stainless steel polished to No. 8 architectural bright finish. Mirrors shall be 18" wide by 24" high. Mirrors shall be similar and equal to Bradley #748.

2.3 Soap Dispensers:

Soap dispensers shall be vertical type units. Soap dispensers shall be similar and equal to Bradley #6563.

2.4 Toilet Tissue Dispensers:

Toilet tissue dispensers shall be similar and equal to Bradley #522.

2.5 Napkin/Tampon Vendor:

Napkin/tampon vendors shall be stainless steel. Napkin/tampon vendors shall be similar and equal to Bradley #4722-15.

2.6 Baby Changing Stations:

Surface mounted baby changing stations shall be fabricated of molded, high density polyethylene with full length, steel hinge pin, mounted at ADA height. Unit shall be able to hold a minimum of 100 lbs. Changing stations shall be similar and equal to Bradley #9631.

PART 3 INSTALLATION:

Washroom accessories shall be installed in accordance with individual manufacturer's recommendations. Washroom accessories shall be keyed alike and the Owner shall be provided with two keys to each type of locking accessory.

END OF SECTION

SECTION 133419 - METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Structural-steel framing.
 - 2. Metal roof panels.
 - 3. Metal wall panels.
 - 4. Thermal insulation.
 - 5. Accessories.

1.3 DEFINITIONS

- A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in standards referenced by this Section.

1.4 OWNER PROVIDED MATERIALS

- A. For this project – 23 Club Baseball Complex – the 23 Club will purchase separately and provide the materials covered in this section. This includes:
 - 1. Structural-steel framing.
 - 2. Metal roof panels.
 - 3. Metal wall panels.
 - 4. Thermal insulation.
 - 5. Accessories.
- B. Manufacturer requirements (Part 2-13349) are shown in this section for reference only. Contractor is responsible for all execution requirements (Part 3-13349) outlined in this specification.

1.5 COORDINATION

- A. Coordinate sizes and locations of concrete foundations and casting of anchor-rod inserts into foundation walls and footings. Anchor rod installation, concrete, reinforcement, and formwork requirements are specified in Section 033000 "Cast-in-Place Concrete."
- B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.6 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to metal building systems including, but not limited to, the following:
 - a. Condition of foundations and other preparatory work performed by other trades.
 - b. Structural load limitations.
 - c. Construction schedule. Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.
 - d. Required tests, inspections, and certifications.
 - e. Unfavorable weather and forecasted weather conditions and impact on construction schedule.
 - 2. Review methods and procedures related to metal roof panel assemblies including, but not limited to, the following:
 - a. Compliance with requirements for purlin and rafter conditions, including flatness and attachment to structural members.
 - b. Structural limitations of purlins and rafters during and after roofing.
 - c. Flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
 - d. Temporary protection requirements for metal roof panel assembly during and after installation.
 - e. Roof observation and repair after metal roof panel installation.
 - 3. Review methods and procedures related to metal wall panel assemblies including, but not limited to, the following:
 - a. Compliance with requirements for support conditions, including alignment between and attachment to structural members.
 - b. Structural limitations of girts and columns during and after wall panel installation.
 - c. Flashings, special siding details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
 - d. Temporary protection requirements for metal wall panel assembly during and after installation.
 - e. Wall observation and repair after metal wall panel installation.

1.7 ACTION SUBMITTALS – **WILL BE OWNER PROVIDED**

- A. Product Data: For each type of metal building system component.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Metal roof panels.
 - b. Metal wall panels.
 - c. Metal soffit panels.
 - d. Thermal insulation and vapor-retarder facings.
 - e. Personnel doors and frames.
 - f. Windows.
 - g. Translucent wall panels.
 - h. Louvers.
- B. Shop Drawings: Indicate components by others. Include full building plan, elevations, sections, details and the following:
1. Anchor-Rod Plans: Submit anchor-rod plans and templates before foundation work begins. Include location, diameter, and minimum required projection of anchor rods required to attach metal building to foundation. Indicate column reactions at each location.
 2. Structural-Framing Drawings: Show complete fabrication of primary and secondary framing; include provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.
 - a. Show provisions for attaching basketball back stops.
 3. Metal Roof and Wall Panel Layout Drawings: Show layouts of panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, clip spacing, trim, flashings, closures, and special details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners.
 - a. Show roof-mounted items including roof hatches, equipment supports, pipe supports and penetrations, lighting fixtures, and items mounted on roof curbs.
 - b. Show wall-mounted items including personnel doors, vehicular doors, windows, louvers, and lighting fixtures.
 - c. Show translucent panels.
 4. Accessory Drawings: Include details of the following items, at a scale of not less than **1-1/2 inches per 12 inches (1:8)**:
 - a. Flashing and trim.
 - b. Gutters.
 - c. Downspouts.
 - d. Service walkways.
- C. Samples for Initial Selection: For units with factory-applied finishes.

- D. Door Schedule: For doors and frames. Use same designations indicated on Drawings. Include details of reinforcement.
 - 1. Door Hardware Schedule: Include details of fabrication and assembly of door hardware. Organize schedule into door hardware sets indicating complete designations of every item required for each door or opening.
 - 2. Keying Schedule: Detail Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.
- E. Delegated-Design Submittal: For metal building systems.
 - 1. Include analysis data indicating compliance with performance requirements and design data signed and sealed by the qualified professional engineer responsible for their preparation.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For erector
- B. Retain "Welding certificates" Paragraph below if retaining "Welding Qualifications" Paragraph in "Quality Assurance" Article.
- C. Welding certificates.
- D. Erector Certificates: For qualified erector, from manufacturer.
- E. Field quality-control reports.

1.9 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal panel finishes and door hardware to include in maintenance manuals.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Protect foam-plastic insulation as follows:

1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to Project site before installation time.
3. Complete installation and concealment of foam-plastic materials as rapidly as possible in each area of construction.

1.11 FIELD CONDITIONS

- A. Weather Limitations: Proceed with panel installation only when weather conditions permit metal panels to be installed according to manufacturers' written instructions and warranty requirements.

PART 2 - PRODUCTS – **OWNER PROVIDED, REFERENCE ONLY**

2.1 MANUFACTURERS

- A. Manufacturers:
 1. B&C Steel Corp.

2.2 SYSTEM DESCRIPTION

- A. Provide a complete, integrated set of mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior.
- B. Primary-Frame Type:
 1. Rigid Clear Span: Solid-member, structural-framing system without interior columns.
 2. Lean-to: Solid- or truss-member, structural-framing system, designed to be partially supported by another structure.
- C. End-Wall Framing: Manufacturer's standard, for buildings not required to be expandable, consisting of primary frame, capable of supporting one-half of a bay design load, and end-wall columns or load-bearing end-wall and corner columns and rafters.
- D. Secondary-Frame Type: Manufacturer's standard purlins and joists and flush-framed girts.
- E. Eave Height: As indicated by nominal height on Drawings.
- F. Bay Spacing: As indicated on Drawings.
- G. Roof Slope: **1 inches per 12 inches (1:6)**.
- H. Roof System: Manufacturer's standard metal roof panels.
 1. Liner Panels: Tapered rib.

I. Exterior Wall System: Manufacturer's standard exposed-fastener metal wall panels.

1. Liner Panels: Tapered rib.

2.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal building system.
- B. Structural Performance: Metal building systems shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to procedures in MBMA's "Metal Building Systems Manual."
1. Design Loads: As indicated on Drawings.
 2. Deflection and Drift Limits: Design metal building system assemblies to withstand serviceability design loads without exceeding deflections and drift limits recommended in AISC Steel Design Guide No. 3 "Serviceability Design Considerations for Steel Buildings."
 3. Deflection and Drift Limits: No greater than the following:
 - a. Purlins and Rafters: Vertical deflection of 1/180 of the span.
 - b. Girts: Horizontal deflection of 1/90 of the span.
 - c. Metal Roof Panels: Vertical deflection of 1/180 of the span.
 - d. Metal Wall Panels: Horizontal deflection of 1/90 of the span.
 - e. Design secondary-framing system to accommodate deflection of primary framing and construction tolerances, and to maintain clearances at openings.
 - f. Lateral Drift: Maximum of 1/60 of the building height.
- C. Seismic Performance: Metal building system shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- E. Fire-Resistance Ratings: Where assemblies are indicated to have a fire-resistance rating, provide metal panel assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 or ASTM E 108 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Indicate design designations from UL's "Fire Resistance Directory," FM Global's "Approval Guide," or from the listings of another qualified testing agency.
- F. Fire Propagation Characteristics: Exterior wall assemblies containing foam plastics pass NFPA 285 fire test.

- G. Structural Performance for Metal Roof and Wall Panels: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:
 - 1. Wind Loads: As indicated on Drawings.
- H. Air Infiltration for Metal Roof Panels: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E 1680 or ASTM E 283 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- I. Air Infiltration for Metal Wall Panels: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E 283 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- J. Water Penetration for Metal Roof Panels: No water penetration when tested according to ASTM E 1646 or ASTM E 331 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- K. Water Penetration for Metal Wall Panels: No water penetration when tested according to ASTM E 331 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- L. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 - 1. Uplift Rating: UL 90.
- M. FM Global Listing: Provide metal roof panels and component materials that comply with requirements in FM Global 4471 as part of a panel roofing system and that are listed in FM Global's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.
 - 1. Fire/Windstorm Classification: Class 1A-90.
 - 2. Hail Resistance: SH.

2.4 STRUCTURAL-STEEL FRAMING

- A. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings."
- B. Bolted Connections: Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
- C. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses.
- D. Primary Framing: Manufacturer's standard primary-framing system, designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to

frames; rafters, rake, and canopy beams; sidewall, intermediate, end-wall, and corner columns; and wind bracing.

1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly. Provide frame span and spacing indicated.
 - a. Slight variations in span and spacing may be acceptable if necessary to comply with manufacturer's standard, as approved by Architect.
 2. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted.
 3. Rigid Modular Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide interior columns fabricated from round steel pipes or tubes, or shop-welded, built-up steel plates.
 4. Frame Configuration: Single gable or Lean-to, with high side connected to and supported by another structure.
 5. Exterior Column: Tapered.
 6. Rafter: Tapered.
- E. End-Wall Framing: Manufacturer's standard primary end-wall framing fabricated for field-bolted assembly to comply with the following:
1. End-Wall and Corner Columns: I-shaped sections fabricated from structural-steel shapes; shop-welded, built-up steel plates; or C-shaped, cold-formed, structural-steel sheet.
 2. End-Wall Rafters: C-shaped, cold-formed, structural-steel sheet; or I-shaped sections fabricated from shop-welded, built-up steel plates or structural-steel shapes.
- F. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet, prepainted with coil coating, to comply with the following:
1. Purlins: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; minimum 2-1/2-inch- (64-mm-) wide flanges.
 - a. Depth: As needed to comply with system performance requirements] <Insert dimension.
 2. Purlins: Steel joists of depths indicated on Drawings.
 3. Girts: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees from flange, with minimum 2-1/2-inch- (64-mm-) wide flanges.
 - a. Depth: As required to comply with system performance requirements] <Insert dimension.
 4. Eave Struts: Unequal-flange, C-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; to provide adequate backup for metal panels.

5. Flange Bracing: Minimum 2-by-2-by-1/8-inch (51-by-51-by-3-mm) structural-steel angles or 1-inch- (25-mm-) diameter, cold-formed structural tubing to stiffen primary-frame flanges.
 6. Sag Bracing: Minimum 1-by-1-by-1/8-inch (25-by-25-by-3-mm) structural-steel angles.
 7. Base or Sill Angles: Manufacturer's standard base angle, minimum 3-by-2-inch (76-by-51-mm), fabricated from zinc-coated (galvanized) steel sheet.
 8. Purlin and Girt Clips: Manufacturer's standard clips fabricated from steel sheet. Provide galvanized clips where clips are connected to galvanized framing members.
 9. Framing for Openings: Channel shapes; fabricated from cold-formed, structural-steel sheet or structural-steel shapes. Frame head and jamb of door openings and head, jamb, and sill of other openings.
 10. Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand required loads.
- G. Canopy Framing: Manufacturer's standard structural-framing system, designed to withstand required loads; fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide frames with attachment plates and splice members, factory drilled for field-bolted assembly.
1. Type: Straight-beam, eave type or Purlin-extension type.
- H. Bracing: Provide adjustable wind bracing using any method as follows:
1. Rods: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 (345); or ASTM A 529/A 529M, Grade 50 (345); minimum 1/2-inch- (13-mm-) diameter steel; threaded full length or threaded a minimum of 6 inches (152 mm) at each end.
 2. Cable: ASTM A 475, minimum 1/4-inch- (6-mm-) diameter, extra-high-strength grade, Class B, zinc-coated, seven-strand steel; with threaded end anchors.
 3. Angles: Fabricated from structural-steel shapes to match primary framing, of size required to withstand design loads.
 4. Rigid Portal Frames: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
 5. Fixed-Base Columns: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
 6. Diaphragm Action of Metal Panels: Design metal building to resist wind forces through diaphragm action of metal panels.
- I. Anchor Rods: Headed anchor rods as required by the metal building system manufacturer for attachment of metal building to foundation.
- J. Materials:
1. W-Shapes: ASTM A 992/A 992M; ASTM A 572/A 572M, Grade 50 or 55 (345 or 380); or ASTM A 529/A 529M, Grade 50 or 55 (345 or 380).
 2. Channels, Angles, M-Shapes, and S-Shapes: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55 (345 or 380); or ASTM A 529/A 529M, Grade 50 or 55 (345 or 380).
 3. Plate and Bar: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55 (345 or 380); or ASTM A 529/A 529M, Grade 50 or 55 (345 or 380).
 4. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.

5. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B or C, structural tubing.
6. Structural-Steel Sheet: Hot-rolled, ASTM A 1011/A 1011M, Structural Steel (SS), Grades 30 through 55 (205 through 380), or High-Strength Low-Alloy Steel (HSLAS) or High-Strength Low-Alloy Steel with Improved Formability (HSLAS-F), Grades 45 through 70 (310 through 480); or cold-rolled, ASTM A 1008/A 1008M, Structural Steel (SS), Grades 25 through 80 (170 through 550), or HSLAS, Grades 45 through 70 (310 through 480).
7. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G60 (Z180) coating designation; mill phosphatized.
8. Metallic-Coated Steel Sheet Prepainted with Coil Coating: Steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G90 (Z275) coating designation.
 - b. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, SS, Grade 50 or 80 (340 or 550); with Class AZ50 (AZM150) coating.
9. Joist Girders: Manufactured according to "Standard Specifications for Joist Girders," in SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders"; with steel-angle, top- and bottom-chord members, and end- and top-chord arrangements as indicated on Drawings and required for primary framing.
10. Steel Joists: Manufactured according to "Standard Specifications for Open Web Steel Joists, K-Series," in SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders"; with steel-angle, top- and bottom-chord members, and end- and top-chord arrangements as indicated on Drawings and required for secondary framing.
11. Non-High-Strength Bolts, Nuts, and Washers: ASTM A 307, Grade A, carbon-steel, hex-head bolts; ASTM A 563 (ASTM A 563M) carbon-steel hex nuts; and ASTM F 844 plain (flat) steel washers.
 - a. Finish: Plain.
12. Structural Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563 (ASTM A 563M) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M) hardened carbon-steel washers.
 - a. Finish: Plain.
13. High-Strength Bolts, Nuts, and Washers: ASTM A 490 (ASTM A 490M), Type 1, heavy-hex steel structural bolts or tension-control, bolt-nut-washer assemblies with spline ends; ASTM A 563 (ASTM A 563M) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M) hardened carbon-steel washers, plain.
14. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 1852, Type 1, heavy-hex-head steel structural bolts with spline ends.
 - a. Finish: Plain.
15. Unheaded Anchor Rods: ASTM F 1554, Grade 55.

- a. Configuration: Straight.
 - b. Nuts: **ASTM A 563** (**ASTM A 563M**) heavy-hex carbon steel.
 - c. Plate Washers: ASTM A 36/A 36M carbon steel.
 - d. Washers: **ASTM F 436** (**ASTM F 436M**) hardened carbon steel.
 - e. Finish: Plain.
16. Headed Anchor Rods: ASTM F 1554, Grade 55.
 - a. Configuration: Straight.
 - b. Nuts: **ASTM A 563** (**ASTM A 563M**) heavy-hex carbon steel.
 - c. Plate Washers: ASTM A 36/A 36M carbon steel.
 - d. Washers: **ASTM F 436** (**ASTM F 436M**) hardened carbon steel.
 - e. Finish: Plain.
17. Threaded Rods: ASTM A 193/A 193M.
 - a. Nuts: **ASTM A 563** (**ASTM A 563M**) heavy-hex carbon steel.
 - b. Washers: **ASTM F 436** (**ASTM F 436M**) hardened carbon steel.
 - c. Finish: Plain.
- K. Finish: Factory primed. Apply specified primer immediately after cleaning and pretreating.
 1. Clean and prepare in accordance with SSPC-SP2.
 2. Coat with manufacturer's standard primer. Apply primer to primary and secondary framing to a minimum dry film thickness of **1 mil** (**0.025 mm**).
 - a. Prime secondary framing formed from uncoated steel sheet to a minimum dry film thickness of **0.5 mil** (**0.013 mm**) on each side.

2.5 METAL ROOF PANELS

- A. Exposed Fastener, Tapered-Rib, Metal Roof Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced or flat pan between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.
 1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, **0.024-inch** (**0.61-mm**) nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - a. Color: As selected by Architect from manufacturer's full range.
 2. Major-Rib Spacing: **6 inches** (**152 mm**) o.c.
 3. Panel Coverage: **36 inches** (**914 mm**).
 4. Panel Height: **1 inch** maximum.
- B. Exposed-Fastener, Tapered-Rib, Metal Liner Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced or flat pan between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.

1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, **0.024-inch (0.61-mm)** nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - a. Exterior Finish: Two-coat fluoropolymer.
 - b. Color: As selected by Architect from manufacturer's full range.
2. Major-Rib Spacing: **6 inches (152 mm)** o.c.
3. Panel Coverage: **36 inches (914 mm)**.
4. Panel Height: **1.5 inches (38 mm)]** maximum.

2.6 METAL WALL PANELS

- A. Exposed-Fastener, Tapered-Rib, Metal Wall Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced or flat pan between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.
 1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, **0.024-inch (0.61-mm)** nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - a. Color: As selected by Architect from manufacturer's full range.
 2. Major-Rib Spacing: **6 inches (152 mm)** o.c.
 3. Panel Coverage: **36 inches (914 mm)**.
 4. Panel Height: **1 inch** maximum.
- B. Tapered-Rib, Metal Liner Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced or flat pan between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.
 1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, **0.024-inch (0.61-mm)** nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - a. Exterior Finish: Siliconized polyester.
 - b. Color: As selected by Architect from manufacturer's full range.
 2. Major-Rib Spacing: **6 inches (152 mm)** o.c.
 3. Panel Coverage: **36 inches (914 mm)]**.
 4. Panel Height: **1 inch** maximum.

2.7 THERMAL INSULATION

- A. Mineral-Fiber-Blanket Insulation: ASTM C 665, type indicated below; consisting of fibers manufactured from glass, slag wool, or rock wool.
 1. R-Value Requirements:

- a. R-33 for roof areas.
 - b. R-25 for wall areas.
2. Nonreflective Faced: Type II (blankets with nonreflective membrane covering), Category 1 (membrane is a vapor retarder), Class A (membrane-faced surface with a flame-spread index of 25 or less).
- B. Retainer Strips: For securing insulation between supports, **0.025-inch (0.64-mm)** nominal-thickness, formed, metallic-coated steel or PVC retainer clips colored to match insulation facing.
- C. Vapor-Retarder Facing: ASTM C 1136, with permeance not greater than **0.02 perm (1.15 ng/Pa x s x sq. m)** when tested according to ASTM E 96/E 96M, Desiccant Method.
 1. Composition: White metallized-polypropylene film facing, fiberglass scrim reinforcement, and kraft-paper backing.
 2. Composition: Aluminum foil facing, elastomeric barrier coating, fiberglass scrim reinforcement, and kraft-paper backing.
 3. Composition: White polypropylene film facing, fiberglass scrim reinforcement, and metallized-polyester film backing.
 4. Composition: White polypropylene film facing and fiberglass-polyester-blend fabric backing.
- D. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
 - a. Color and Gloss: As selected by Architect from manufacturer's full range.

2.8 ACCESSORIES

- A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.
 1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
- B. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including copings, fasciae, corner units, ridge closures, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.
 1. Closures: Provide closures at eaves and ridges, fabricated of same material as metal roof panels.
 2. Clips: Manufacturer's standard, formed from steel sheet, designed to withstand negative-load requirements.
 3. Cleats: Manufacturer's standard, mechanically seamed cleats formed from steel sheet.
 4. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.

5. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
 6. Thermal Spacer Blocks: Where metal panels attach directly to purlins, provide thermal spacer blocks of thickness required to provide 1-inch (25-mm) standoff; fabricated from extruded polystyrene.
- C. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including copings, fasciae, mullions, sills, corner units, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels unless otherwise indicated.
1. Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels.
 2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
 3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- D. Flashing and Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match adjacent metal panels.
1. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
 2. Opening Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch (0.76-mm) nominal uncoated steel thickness, prepainted with coil coating. Trim head and jamb of door openings, and head, jamb, and sill of other openings.
- E. Materials:
1. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide fasteners with heads matching color of materials being fastened by means of plastic caps or factory-applied coating.
 - a. Fasteners for Metal Roof Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with a stainless-steel cap or zinc-aluminum-alloy head and EPDM sealing washer.
 - b. Fasteners for Metal Wall Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with EPDM sealing washers bearing on weather side of metal panels.
 - c. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head.
 - d. Blind Fasteners: High-strength aluminum or stainless-steel rivets.

2. Corrosion-Resistant Coating: Cold-applied asphalt mastic, compounded for **15-mil (0.4-mm)** dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
3. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.
4. Metal Panel Sealants:
 - a. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene-compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape of manufacturer's standard size.
 - b. Joint Sealant: ASTM C 920; one part elastomeric polyurethane or polysulfide; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended by metal building system manufacturer.

2.9 FABRICATION

- A. General: Design components and field connections required for erection to permit easy assembly.
 1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
 2. Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members shall be free of cracks, tears, and ruptures.
- B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances.
- C. Primary Framing: Shop fabricate framing components to indicated size and section, with baseplates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.
 1. Make shop connections by welding or by using high-strength bolts.
 2. Join flanges to webs of built-up members by a continuous, submerged arc-welding process.
 3. Brace compression flange of primary framing with steel angles or cold-formed structural tubing between frame web and purlin web or girt web, so flange compressive strength is within allowable limits for any combination of loadings.
 4. Weld clips to frames for attaching secondary framing if applicable, or punch for bolts.
 5. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP 2. Shop prime primary framing with specified primer after fabrication.
- D. Secondary Framing: Shop fabricate framing components to indicated size and section by roll forming or break forming, with baseplates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.
 1. Make shop connections by welding or by using non-high-strength bolts.
 2. Shop Priming: Prepare uncoated surfaces for shop priming according to SSPC-SP 2. Shop prime uncoated secondary framing with specified primer after fabrication.

- E. Metal Panels: Fabricate and finish metal panels at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
 - 1. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of metal panel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Before erection proceeds, survey elevations and locations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances.
- C. Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition.
- B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION OF STRUCTURAL FRAMING

- A. Erect metal building system according to manufacturer's written instructions and drawings.
- B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer.
- C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection.
- D. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
 - 1. Set plates for structural members on wedges, shims, or setting nuts as required.
 - 2. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.

3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 1. Level and plumb individual members of structure.
 2. Make allowances for difference between temperature at time of erection and mean temperature when structure will be completed and in service.
- F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation. Moist-cure grout for not less than seven days after placement.
 1. Make field connections using high-strength bolts installed according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt type and joint type specified.
 - a. Joint Type: Snug tightened or pretensioned as required by manufacturer.
- G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.
 1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
 2. Locate and space wall girts to suit openings such as doors and windows.
 3. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.
- H. Steel Joists and Joist Girders: Install joists, girders and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders," joist manufacturer's written instructions, and requirements in this Section.
 1. Before installation, splice joists delivered to Project site in more than one piece.
 2. Space, adjust, and align joists accurately in location before permanently fastening.
 3. Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction.
 4. Joist Installation: Bolt joists to supporting steel framework using high-strength structural bolts unless otherwise indicated. Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for high-strength structural bolt installation and tightening requirements.
 5. Joist Installation: Weld joist seats to supporting steel framework.
 6. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.
- I. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.

1. Tighten rod and cable bracing to avoid sag.
 2. Locate interior end-bay bracing only where indicated.
- J. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.
- K. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

3.4 METAL PANEL INSTALLATION, GENERAL

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.
- C. Examination: Examine primary and secondary framing to verify that structural-panel support members and anchorages have been installed within alignment tolerances required by manufacturer.
1. Examine roughing-in for components and systems penetrating metal panels, to verify actual locations of penetrations relative to seams before metal panel installation.
- D. General: Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
1. Field cut metal panels as required for doors, windows, and other openings. Cut openings as small as possible, neatly to size required, and without damage to adjacent metal panel finishes.
 - a. Field cutting of metal panels by torch is not permitted unless approved in writing by manufacturer.
 2. Install metal panels perpendicular to structural supports unless otherwise indicated.
 3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements. Fasten with self-tapping screws.
 4. Locate and space fastenings in uniform vertical and horizontal alignment.
 5. Locate metal panel splices over structural supports with end laps in alignment.
 6. Lap metal flashing over metal panels to allow moisture to run over and off the material.
- E. Lap-Seam Metal Panels: Install screw fasteners using power tools with controlled torque adjusted to compress EPDM washers tightly without damage to washers, screw threads, or metal panels. Install screws in predrilled holes.

1. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply metal panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.
- F. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.
- G. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated; or, if not indicated, provide types recommended by metal panel manufacturer.
 1. Seal metal panel end laps with double beads of tape or sealant the full width of panel. Seal side joints where recommended by metal panel manufacturer.
 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

3.5 METAL ROOF PANEL INSTALLATION

- A. General: Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.
 1. Install ridge and hip caps as metal roof panel work proceeds.
 2. Flash and seal metal roof panels with weather closures at eaves and rakes. Fasten with self-tapping screws.
- B. Standing-Seam Metal Roof Panels: Fasten metal roof panels to supports with concealed clips at each standing-seam joint, at location and spacing and with fasteners recommended by manufacturer.
 1. Install clips to supports with self-drilling or self-tapping fasteners.
 2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
 3. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.
 4. Seamed Joint: Crimp standing seams with manufacturer-approved motorized seamer tool so that clip, metal roof panel, and factory-applied sealant are completely engaged.
 5. Rigidly fasten eave end of metal roof panels and allow ridge end free movement for thermal expansion and contraction. Predrill panels for fasteners.
 6. Provide metal closures at peaks, rake edges, rake walls and each side of ridge and hip caps.
- C. Lap-Seam Metal Roof Panels: Fasten metal roof panels to supports with exposed fasteners at each lapped joint, at location and spacing recommended by manufacturer.
 1. Provide metal-backed sealing washers under heads of exposed fasteners bearing on weather side of metal roof panels.

2. Provide sealant tape at lapped joints of metal roof panels and between panels and protruding equipment, vents, and accessories.
 3. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps and on side laps of nesting-type metal panels, on side laps of ribbed or fluted metal panels, and elsewhere as needed to make metal panels weatherproof to driving rains.
 4. At metal panel splices, nest panels with minimum **6-inch (152-mm)** end lap, sealed with butyl-rubber sealant and fastened together by interlocking clamping plates.
- D. Metal Fascia Panels: Align bottom of metal panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws. Flash and seal metal panels with weather closures where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.
- E. Metal Roof Panel Installation Tolerances: Shim and align metal roof panels within installed tolerance of **1/4 inch in 20 feet (6 mm in 6 m)** on slope and location lines and within **1/8-inch (3-mm)** offset of adjoining faces and of alignment of matching profiles.

3.6 METAL WALL PANEL INSTALLATION

- A. General: Install metal wall panels in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to girts, extending full height of building, unless otherwise indicated. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement.
1. Unless otherwise indicated, begin metal panel installation at corners with center of rib lined up with line of framing.
 2. Shim or otherwise plumb substrates receiving metal wall panels.
 3. When two rows of metal panels are required, lap panels **4 inches (102 mm)** minimum.
 4. When building height requires two rows of metal panels at gable ends, align lap of gable panels over metal wall panels at eave height.
 5. Rigidly fasten base end of metal wall panels and allow eave end free movement for thermal expansion and contraction. Predrill panels.
 6. Flash and seal metal wall panels with weather closures at eaves and rakes, and at perimeter of all openings. Fasten with self-tapping screws.
 7. Install screw fasteners in predrilled holes.
 8. Install flashing and trim as metal wall panel work proceeds.
 9. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete, and elsewhere as indicated on Drawings; if not indicated, as necessary for waterproofing.
 10. Align bottom of metal wall panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws.
 11. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls.
- B. Metal Wall Panels: Install metal wall panels on exterior side of girts. Attach metal wall panels to supports with fasteners as recommended by manufacturer.

3.7 THERMAL INSULATION INSTALLATION

- A. General: Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface, according to manufacturer's written instructions.

1. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces except for firestopping.
2. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to the surrounding construction to ensure airtight installation.
3. Install factory-laminated, vapor-retarder-faced blankets straight and true in one-piece lengths, with both sets of facing tabs sealed, to provide a complete vapor retarder.
4. Install blankets straight and true in one-piece lengths. Install vapor retarder over insulation, with both sets of facing tabs sealed, to provide a complete vapor retarder.

B. Blanket Roof Insulation: Comply with the following installation method:

1. Over-Framing Installation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Hold in place by metal roof panels fastened to secondary framing.
2. Between-Purlin Installation: Extend insulation and vapor retarder between purlins. Carry vapor-retarder-facing tabs up and over purlin, overlapping adjoining facing of next insulation course and maintaining continuity of retarder. Hold in place with bands and crossbands below insulation.
3. Over-Purlin-with-Spacer-Block Installation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Install layer of filler insulation over first layer to fill space formed by metal roof panel standoffs. Hold in place by panels fastened to standoffs.
 - a. Thermal Spacer Blocks: Where metal roof panels attach directly to purlins, install thermal spacer blocks.
4. Two-Layers-between-Purlin-with-Spacer-Block Installation: Extend insulation and vapor retarder between purlins. Carry vapor-retarder-facing tabs up and over purlin, overlapping adjoining facing of next insulation course and maintaining continuity of retarder. Install layer of filler insulation over first layer to fill space between purlins formed by thermal spacer blocks. Hold in place with bands and crossbands below insulation.
 - a. Thermal Spacer Blocks: Where metal roof panels attach directly to purlins, install thermal spacer blocks.
5. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.

C. Blanket Wall Insulation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Hold in place by metal wall panels fastened to secondary framing.

1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.
2. Sound-Absorption Insulation: Where sound-absorption requirement is indicated for metal liner panels, cover insulation with polyethylene film and provide inserts of wire mesh to form acoustical spacer grid.

D. Board Wall Insulation: Extend board insulation in thickness indicated to cover entire wall. Hold in place by metal wall panels fastened to secondary framing. Comply with manufacturers' written instructions.

1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.

3.8 DOOR AND FRAME INSTALLATION

- A. General: Install doors and frames plumb, rigid, properly aligned, and securely fastened in place according to manufacturers' written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each door frame with elastomeric sealant used for metal wall panels.
- B. Personnel Doors and Frames: Install doors and frames according to NAAMM-HMMA 840. Fit non-fire-rated doors accurately in their respective frames, with the following clearances:
 1. Between Doors and Frames at Jambs and Head: 1/8 inch (3 mm).
 2. Between Edges of Pairs of Doors: 1/8 inch (3 mm).
 3. At Door Sills with Threshold: 3/8 inch (9.5 mm).
 4. At Door Sills without Threshold: 3/4 inch (19.1 mm).
 5. At fire-rated openings, install frames according to, and doors with clearances specified in, NFPA 80.
- C. Sliding Service Doors: Bolt support angles to opening head members through factory-punched holes. Bolt door tracks to support angles at maximum 24 inches (610 mm) o.c. Set doors and operating equipment with necessary hardware, jamb and head mold stops, continuous hood flashing, anchors, inserts, hangers, and equipment supports.
- D. Field Glazing: Comply with installation requirements in Section 088000 "Glazing."
- E. Door Hardware:
 1. Install surface-mounted items after finishes have been completed at heights indicated in DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 2. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 3. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
 4. Set thresholds for exterior doors in full bed of sealant complying with requirements for concealed mastics specified in Section 079200 "Joint Sealants."

3.9 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
 1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
 2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.

3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).
- C. Louvers: Locate and place louver units level, plumb, and at indicated alignment with adjacent work.
1. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
 2. Provide perimeter reveals and openings of uniform width for sealants and joint fillers.
 3. Protect galvanized- and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of corrosion-resistant paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.
 4. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

3.10 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform field quality control special inspections and to submit reports.
- B. Product will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

3.11 ADJUSTING

- A. Doors: After completing installation, test and adjust doors to operate easily, free of warp, twist, or distortion.

- B. Door Hardware: Adjust and check each operating item of door hardware and each door to ensure proper operation and function of every unit. Replace units that cannot be adjusted to operate as intended.
- C. Windows: Adjust operating sashes and ventilators, screens, hardware, and accessories for a tight fit at contact points and at weather stripping to ensure smooth operation and weathertight closure. Lubricate hardware and moving parts.
- D. Roof Ventilators and Adjustable Louvers: After completing installation, including work by other trades, lubricate, test, and adjust units to operate easily, free of warp, twist, or distortion as needed to provide fully functioning units.
 - 1. Adjust louver blades to be weathertight when in closed position.

3.12 CLEANING AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780/A 780M and manufacturer's written instructions.
- B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- C. Touchup Painting: After erection, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted structural framing, bearing plates and accessories.
 - 1. Clean and prepare surfaces by SSPC-SP 2, "Hand Tool Cleaning," or by SSPC-SP 3, "Power Tool Cleaning."
 - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.
- D. Touchup Painting: Cleaning and touchup painting are specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
- E. Metal Panels: Remove temporary protective coverings and strippable films, if any, as metal panels are installed. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
 - 1. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.
- F. Doors and Frames: Immediately after installation, sand rusted or damaged areas of prime coat until smooth and apply touchup of compatible air-drying primer.
 - 1. Immediately before final inspection, remove protective wrappings from doors and frames.
- G. Windows: Clean metal surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances. Clean factory-glazed glass immediately after installing windows.

- H. Louvers: Clean exposed surfaces that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate until final cleaning.
 - 1. Restore louvers damaged during installation and construction period so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.
 - a. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 133419

SECTION 15050 PIPING AND PLUMBING

PART 1 GENERAL:

The materials to be supplied and work to be performed as described by this Section consists of furnishing all materials, equipment, supplies, and appurtenances required, and of performing all operations in connection with the construction of all exposed and buried piping and plumbing work.

PART 2 DRAWINGS:

Details shown on the Drawings are intended to show the approximate location of piping within and around the buildings and are not exact. Actual dimensions of piping and related appurtenances shall be dependent upon the dimensions of items of equipment furnished and installed by the Contractor. The Contractor shall be responsible for verifying all space requirements, the locations and connections of equipment within buildings or structures, including the location of piping where it passes through walls, ceilings or floors. All such dimensions of piping and equipment shall be verified in the field by the Contractor, based on the actual final dimensions of buildings, structures, and equipment.

PART 3 LOCAL CODES AND ORDINANCES:

The Contractor shall comply with all local building and plumbing codes, where applicable and these codes shall take precedence over the Drawings and Specifications. (See Division 1, Section 01060)

PART 4 PIPING ALIGNMENT AND FLEXIBILITY:

- 4.1 Complete provisions are not always shown on the Drawings, and the Contractor may add flexible joints to the piping where required but only as approved by the Engineer.
- 4.2 All exposed piping shall be installed plumb and square with adjacent walls and floors, without high points that could trap air or other gasses. Piping shall be installed at a straight and continuous grade between elevations shown on the Drawings.
- 4.3 The Contractor shall be responsible for coordinating the work of all crafts including but not limited to: piping and plumbing, heating and duct work, electrical, carpentry, mill work, concrete and masonry so as to avoid conflicts.

- 4.4 All pipelines subject to expansion or contraction shall have adequate provision for movement through the use of expansion joints or bends.

PART 5 PIPE INSTALLATION THROUGH CONCRETE OR MASONRY STRUCTURES:

- 5.1 Whenever a pipe passes through the wall, ceiling or floor of a structure to the adjoining earth, a bell and spigot or other flexible joint shall be installed within one (1) foot of the exterior of the concrete or block wall. Special care shall be taken to obtain full support of piping adjacent to structures in excavated areas.
- 5.2 Block-outs shall be used only where indicated on the Drawings or specified. Block-outs shall be accurately centered around the pipes and shall be no larger than necessary to permit adequate passage of bells or flanges. Block-outs may not be used where water, ground water or other liquids are contained.
- 5.3 Where pipes are to be installed through existing concrete or masonry walls, the opening shall be saw cut to provide a straight and even edge.
- 5.4 After the pipe is installed, openings shall be grouted closed using an expansive grout similar and equal to "5 Star Grout". On exterior surfaces, the grout shall terminate $\frac{3}{4}$ -inch from the surface, and a coating of 3:1 Portland Cement Plaster shall be applied, flush with the exterior wall. The exterior of the grouted opening shall be painted with two coats of "Thoroseal" foundation coating as manufactured by Standard Dry Wall Products.
- 5.5 The Contractor shall provide a sufficient number of flanges unions, or couplings to permit dismantling of the pipe without disturbing adjacent piping or piping in concrete.

- 5.6 Pipelines through concrete walls or tanks used to contain water, sewage, or other liquids (or when so indicated on the Drawings) shall have a wall flange consisting of a ¼-inch thick by 2-inch deep cast-iron flange brazed around the pipe at the center of the wall, to prevent seepage of liquids around the pipe. The wall pipe section with flanges shall be poured in place.

PART 6 TESTING OF PIPE.

- 6.1 All piping shall be visually inspected for leaks or seepage and shall be pressure tested to 150 percent of the normal operating pressure. Any leaks or failures of the piping shall be immediately repaired by the Contractor at no additional expense to the Owner.
- 6.2 The Engineer may require the testing of piping or pipe materials in accordance with applicable ASTM, ASA, or AWWA Standards.

END OF SECTION

SECTION 15410 PLUMBING PIPING MATERIALS

PART 1 SCOPE OF WORK:

The work to be performed in accordance with this Section consists of furnishing all material, equipment, supplies and accessories required, and of performing all labor required for installation of plumbing piping.

PART 2 GENERAL:

Unless otherwise indicated following, all plumbing and piping materials shall conform to the appropriate local building codes. Where local codes are not in effect, the codes listed in Section 01060, REGULATORY REQUIREMENTS, shall govern the installation of plumbing and piping under this Contract.

PART 3 MATERIALS:

3.1 Copper Pipe:

Shall be type "L" rigid copper pipe and shall conform to ASA Specification H23.1. Soft copper tubing shall not be used, unless specifically approved by the Engineer.

3.2 Metal Pipe:

Small diameter, metal piping shall be standard weight (schedule 40) black steel with threaded couplings. Fittings shall be standard weight and dimensions. Galvanized piping shall be used where called for on the drawings.

3.3 PVC Pipe:

PVC pipe for sanitary sewer shall be SDR-35. PVC piping for water service (where allowed by local code) shall be Schedule 40 or AWWA C900 as applicable.

3.4 PEX Pipe:

PEX pipe for water distribution shall be the requirements of ASTM F 876.

3.5 Gas Piping:

- A. Gas piping shall be standard weight black steel with welded fittings - Schedule 40. Shut offs shall be lubricated plug type. Buried gas piping shall be treated with an approved protective wrapping.
- B. After installation is completed, the piping shall be tested against an air pressure of 50 psi for a minimum of 24 hours. If any loss of pressure occurs, leaks shall be located and repaired and the piping shall be retested. Gas piping shall be laid out and installed by the natural gas utility.

3.6 Fittings:

Fittings shall be of materials consistent with the piping material installed.

PART 4 INSTALLATION:

- 4.1 Unions shall be used at all connections to equipment, fixtures, valves, or controls. Horizontal piping shall be installed without sags or humps and with a graduated fall to permit drainage of the system, where appropriate.
- 4.2 Piping installed shall be free of vibrations and shall be supported as required (Ref. Section 15140). The Contractor shall install all unions, fittings, and joints required to allow contraction and expansion. Piping to fixtures shall be secured to prevent pipe pulling away from fixture.

END OF SECTION

SECTION 15440 PLUMBING FIXTURES:

PART 1 GENERAL:

The work to be performed in accordance with this Section consists of furnishing all material, equipment, supplies and accessories required, and of performing all labor required for installation of the following plumbing fixtures.

PART 2 MATERIALS:

2.1 Floor Drains:

The drain shall have a coated cast-iron body with integral trap and a nickel bronze grate with vandal proof screws. The integral trap shall have an internal cleanout, removable backwater valve and a minimum of 8 inch grate. Floor drains shall be similar and equal to Zurn No. Z742 or Jay R. Smith Manufacturing 2530.

2.2 Water Closets:

All water closets shall include new seats and bolts caps.

A. New floor mounted water closets shall be American Standard, Model Madera Toilet (#3043.001) or approved equal.

2.3 Grab Bars:

Grab bars shall be closed end 18 gauge x 1½" diameter, with concealed mounting and satin finish. Grab bars shall be similar and equal to Bradley #812 series.

2.4 Flush Valve:

All flush valves shall be water saving gallonage to match the fixture to be installed. Flush valves for water closets shall be Sloan No. Royal 111. Flush valves for urinals shall be Sloan No. Royal 186. The Contractor shall verify dimensions of existing knock-outs and fixtures prior to ordering materials.

2.5 Urinals:

The fixture shall be supplied with the wall hangers, stainless steel flush pipe assembly and a stainless steel beehive strainer.

- A. All urinals shall be supplied with the wall hangers, stainless steel flush pipe assembly and a beehive strainer. All urinals shall be equal to American Standard Model Washbrook Urinal (#6590.001), 1.0 gallon flush.

2.6 Wash Sinks:

Wash sinks shall be equal to that manufactured by American-Standard, Model Regalyn Lavatory' 19" x 17" (#4867.004) enameled cast-iron wall mounted sink. The fixture shall be supplied with a integral front overflow and 4" spread faucet holes.

2.7 Hand Sink (Kitchen only):

Hand sink shall be similar or equal to that manufactured by American-Standard, Model Lucern wall mounted sink and faucet 0356.028. Include Amarilis Heritage faucet with Triune Cross Handles 4801.862 (or equal).

2.8 Mop Sink:

Mop sink shall be similar or equal to that manufactured by Mustee-, Utilitub, 24 x 18 polyporpylene floor mounted sink and faucet model 21CP.

2.9 Sink Faucets (Bathroom Wash Sinks Only):

The sink faucets shall be American Standard Model Nextgen Selectronic Integrated Proximity Lavatory Faucet No. 7755.303 with 4" Deck Plate (775P.400).

2.10 Three- Compartment Sink

The three compartment sink shall be high grade heavy duty 18 guage 304 type stainless steel. Each basin shall be at least 10" deep and 12"x16" dimensions with a side drain board at least 16" wide. Similar or equal to Koolmore model CS312-16S. Include commercial grade wall mount faucet with reach to all three compartments.

2.11 Traps:

Traps shall be cast iron coated inside and out with a rust inhibitor. Traps shall be 17 gauge thickness, minimum.

2.12 Drinking Fountains/Water Coolers:

Water cooler shall be Elkay EZH20 Vandal-Resistant Bottle Filling Station & Bi-Level Cooler, Non-Filtered 8 GPH, Stainless. Model VRCTL8WSK or approved equal.

2.13 Hose bibs:

A. Exterior Hose Bibs:

Exterior mounted hose bibs shall be similar and equal to Woodford, Model 65 or Zurn, Model 1310 automatic draining, freezeless wall hydrant, with vacuum breaker, backflow preventer, ¾-inch hose thread, ¾-inch inlet, polished brass finish on brass castings. A loose tee key shall be furnished with the hydrant.

PART 3 INSTALLATION:

All fixtures shall be installed using new and unused piping, seals, valves and hangers, unless otherwise specified or shown on the Drawings. Installation of the fixtures shall be as recommended by the manufacture and shall provide a water tight fit to the plumbing and the fixture shall be installed to provide secure and strong mounting to prevent abuse. Piping penetrations through floors, walls, and ceilings shall be sealed and a stainless steel escutcheon plate shall be provided for each penetration.

END OF SECTION
