Metro Central Transfer Station

Tipping Floor Repair Design

MPE P-53 MCTS Tipping Floor Repair Design
Issue for Bids
September 1, 2017

12181 University Avenue NE
Mitchellville, Iowa  50169
I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Iowa.

Svein K. Magnussen
Iowa License No. 23213
My license renewal date is December 31, 2017.

Pages or sheets covered by this seal:
00G00, 00S01-00S05
Section 03 09 00

Michael A. Classen
Iowa License No. 22350
My license renewal date is December 31, 2017.

Pages or sheets covered by this seal:
00G00, 00C01-00C03Divisions 00, 01
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PROCUREMENT AND CONTRACTING REQUIREMENTS
Notice is hereby given that there are on file with Metro Waste Authority (the Authority), in the County of Polk, State of Iowa a request for proposal (RFP) for replacement of the entire facility tipping floor at Metro Central Transfer Station (MCTS) throughout the interior with a high strength concrete topping. As part of the floor replacement project, the existing trench drain system shall be removed and replaced, the push wall will be extended, the hopper skirt repaired and the existing fueling island removed and a new fuel island relocated as shown on the Drawings. Alternates which may be completed with this project include a semi-trailer turnout lane addition, and storm water drainage replacement completed on the north side of the transfer station.

Sealed Bids for the design and construction of the P-53 Metro Central Transfer Station will be received, by the Authority, at the office of the Metro Waste Authority, 300 East Locust Street, Suite 100, Des Moines, Iowa 50309, until 4:00 o’clock PM local time on September 13, 2017, at which time the Bids received will be opened and publically read by the Authority’s representative. A hearing will be conducted on the RFP at a meeting of the Authority to be held at the Authority’s office at 300 East Locust Street in Des Moines, Iowa, at 5:45 PM, on September 20, 2017, at which time and place any person may appear and file objections to the proposed RFP for said public improvements. Sealed bids previously received for such project will be presented to and considered by the Authority immediately after the termination of said hearing. Bids received will be acted upon at such time and place or at such later time and place as may then be fixed.

The Project shall be commenced on 10-9-2017. During the first three weeks (Phase 1 of interior Work) MCTS will remain in service and work within the station will be allows on the east half of the tipping floor and trench drain as shown on the Drawings. Fuel must be available at all times for MCTS operations during Phase 1 and upon substantial completion of Phase 2. Beginning on 10-30-2017, MCTS will be closed for 30 days (Phase 2 of interior Work) for Work completed on the tipping floor, hopper area and trench drain. Substantial work including concrete cure allowing MCTS to return to service must be completed during Phase 2 on or before 11-28-2017. All other work including the existing fueling island removal and a new fuel island installation and as applicable, all Alternates shall be substantially complete by 12-7-2017. All work shall be completed including punchlist, final walkthrough, and ready for final payment on or before 12-29-2017, subject to any extension of time which may be granted by the Authority.

The Issuing Office for the Bidding Documents is: HDR Engineering, Inc., 300 East Locust Street, Suite 210, Des Moines, IA 50309-1823, Phone (515) 280-4940. Prospective Bidders may review the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 9:00 AM and 4:00 PM local time and may obtain copies of the Bidding Documents from the Issuing Office as described below, or by contacting the bid administrator, Greg Gesell at Gregory.Gesell@hdrinc.com, (402) 399-4978.
Copies of the Bidding Documents in electronic format (on compact disc as portable document format (PDF)) may be obtained from the Issuing Office during the hours indicated above. Copies of the Bidding Documents in paper format may be obtained from the Issuing Office upon payment of a deposit of $100 for each set. Bidders who return full sets of the Bidding Documents in good condition (suitable for re-use) within 14 days after Notice of Award will receive a full refund. Checks for Bidding Documents shall be payable to “HDR Engineering, Inc.”. Upon request and receipt of the document deposit indicated above, the Issuing Office will transmit the Bidding Documents via delivery service. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the Bidder’s date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

A non-mandatory pre-bid conference will be held on September 6 at 10:00 A.M. at the MCTS in association with Bidding Documents. Bidders may arrange to visit the site at other times by contacting the bid administrator. Bids will be received for a single prime Contract. Bidder shall submit their terms and conditions for the Authority to review before entering into a contract. Bids shall be on a lump sum and unit price basis, with additive alternate bid items as indicated in the Bid Form, as required.

Each Bidder shall accompany a bid with a bid security. Bid security shall be furnished in accordance with the Instructions to Bidders.

A summary of information included herein is provided below for the Prospective Bidder’s convenience:

<table>
<thead>
<tr>
<th>Project Title:</th>
<th>MWA Project P-53 – MCTS Tipping Floor Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Description:</td>
<td>Contract documents for the repair of the entire facility tipping floor at Metro Central Transfer Station (MCTS) throughout the interior with a high strength concrete topping. As part of the floor replacement project, the existing new trench drain system shall be removed and replaced, the push wall will be extended, the hopper skirt steel repaired and the existing fueling island removed and a new fuel island installed. Work inside MCTS will be completed in two phases as indicated on the Drawings. Alternates which may be completed with this project include a semi-trailer turnout lane addition, and storm water drainage replacement completed on the north side of the MCTS.</td>
</tr>
<tr>
<td>Project Location(s):</td>
<td>Metro Central Transfer Station, 4198 Delaware Avenue, , Des Moines, Iowa, 50313</td>
</tr>
<tr>
<td>Notice of Hearing:</td>
<td>[09-20-2017]</td>
</tr>
<tr>
<td>Issuing Office:</td>
<td>HDR Engineering, Inc. 300 East Locust Street, Suite 210 Des Moines, Iowa 50309-1823 <a href="mailto:Gregory.Gesell@hdrinc.com">Gregory.Gesell@hdrinc.com</a>, (402) 399-4978</td>
</tr>
<tr>
<td>Bid Opening:</td>
<td>09-13-2017 at 4:00 PM local time</td>
</tr>
<tr>
<td>Bid Award</td>
<td>09-20-2017 at [5:45] PM local time</td>
</tr>
<tr>
<td>Submit Bids To:</td>
<td>Metro Waste Authority Attn: Yuta Naganuma 300 East Locust Street, Suite 100 Des Moines, IA 50309</td>
</tr>
</tbody>
</table>
Project Dates: Commencement: Phase 1 and Work external to the transfer station 10-9-2017
Phase 2 10-30-2017
Substantial Completion: All Work interior to MCTS 11-28-2017
All other Work 12-7-2017
All Work complete for final billing by 12-29-2017

The Authority reserves the right to reject any or all bids, to re-advertise for new bids and to waive informalities that may be in the best interests of the Authority.

Published upon order of the Authority.

Owner: Metro Waste Authority
By: Yuta Naganuma
Title: Director of Operations
Date: 09-01-2017

++ END OF ADVERTISEMENT FOR BIDS ++
SECTION 00 20 00
SUGGESTED INSTRUCTIONS TO BIDDERS

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 Notice of Hearing and Letting.

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.

2.04 Electronic Copies of Files:

A. Electronic copies of AutoCAD 2016 (.DWG) model files of existing and proposed surfaces from the Contract Document Drawings will be made available for informational purposes only to plan holders on Digital Compact Discs (CDs) included with the hard copy Contract Documents.

B. Recipients of these electronic files, by virtue of opening the files, agree to and accept the following disclaimer and indemnification provisions which have been embedded in the CD’s and included with the model files:

1. “The data contained in this electronic media is an instrument of service prepared by HDR Engineering, Inc. (Engineer) for the Metro Waste Authority (Owner), and is the exclusive property of the Engineer.

2. Any unauthorized reuse of the data contained herein by the recipient shall be at the recipient’s sole risk.

3. By opening this file the recipient agrees to indemnify, defend and hold harmless the Engineer and Owner from any claims or liability allegedly arising from such actions.

4. Because data stored in electronic media format can deteriorate or be modified inadvertently, or otherwise, without authorization of the data’s creator, the party receiving electronic files agrees this data furnished by Owner or Engineer to recipient in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party.

5. Any conclusion or information obtained or derived from such electronic files will be at the user’s sole risk.

6. This may not be a complete set of Conformed Drawings, figures, sketches, calculations, attachments, and information and does not contain changes, clarifications, supplements, interpretations which result from actual construction, field order, change orders, change directives, and Owner supplements, except as specifically noted.

7. These Documents are complementary to and must be used in conjunction with the other Drawings and Technical Specifications. Bidding and Contract Document documentation that may be relied upon are limited to the printed copies (also known as hard copies) distributed by the Owner or Engineer.
8. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

9. In transferring documents in electronic format, the transferring party makes no representations as
to the current or long term compatibility, usability, or readability of documents resulting from
the use of software application packages, operating systems, or computer hardware differing
from those used by the data’s creator.

10. The system software from which the digital files were created is AutoCAD Version 2016.

11. Surface data may additionally presented in .XML format and displayed in both TIN and Polyline
format.”

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder’s qualifications to perform the Work, Bidder shall submit with its Bid (a) written
evidence establishing its qualifications such as financial data, previous experience, and present
commitments, and (b) the following additional information:

A. Evidence of Bidder’s authority to do business in the state where the Project is located.
B. Bidder’s state or other contractor license number, if applicable.
C. Subcontractor and Supplier qualification information.
D. Other required information regarding qualifications.

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.

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 Site visits during normal working hours, and shall not disturb any ongoing operations at the Site.

B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner’s authority regarding the Site.

D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 Owner’s Safety Program

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

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

ARTICLE 5 – BIDDER’S REPRESENTATIONS

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

A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;

D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs;

F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;

I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and

J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.
ARTICLE 6 – PRE-BID CONFERENCE

6.01 A non-mandatory pre-Bid conference will be held as noted in Section 00 10 00 as part of Project Bid solicitation.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

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

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

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder’s maximum Bid price (determined by adding the base bid and all alternates, if applicable) 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 exercise its rights under the Bid Bond. Such forfeiture shall be Owner’s exclusive remedy if Bidder defaults.

8.03 Owner shall promptly return the Bid security of unsuccessful bidders to the bidders as soon as the successful bidder is determined or within thirty (30) days, whichever is sooner.

ARTICLE 9 – CONTRACT TIMES

9.01 The number of days within which, or the dates by which, Milestones are to be achieved and the Work is to be substantially completed, and 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 The apparent low Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list, on the form entitled Tabulation of Subcontractors and Suppliers attached hereto as Exhibit A, of the Subcontractors and Suppliers proposed for the portions of the Work as identified on Exhibit A.

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 the apparent low Bidder to submit an acceptable substitute, in which case apparent low 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. The corporate seal shall be affixed and attested by the corporate secretary or an assistant corporate secretary.

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 Lump Sum / Unit Price

A. Bidders shall submit a Bid on a firm fixed price basis for both lump sum and unit price items as set forth in the Bid Form.

14.02 Unit Price

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The “Bid Price” (sometimes referred to as the extended price) for each unit price Bid item will be the product of the “Estimated Quantity” (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding “Bid Unit Price” offered by the Bidder. The total of all unit price Bid items will be the sum of these “Bid Prices”; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14.03 Allowances

A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor’s overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 15 – SUBMITTAL OF BID

15.01 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.
A Bid shall be received no later than the date and time prescribed and at the place indicated in the Notice of Hearing and Letting 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:

ATTN: Yuta Naganuma  
Metro Waste Authority  
300 East Locust Street, Suite 100  
Des Moines, IA  50309

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

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.

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.

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

Bids will be opened at the time and place indicated in the Notice of Hearing and Letting, unless obviously non-responsive, and 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

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

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.

If Owner awards the contract for the Work, such award shall be to the lowest responsive, responsible Bidder.
19.03 Evaluation of Bids:

A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

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 Owner is exempt from Iowa state sales and use taxes on materials and equipment to be incorporated in the Work. (Exemption No. 42-720039K). Said taxes shall not be included in the Bid. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.
EXHIBIT A

INSTRUCTIONS TO BIDDERS

Name of Firm Submitting Bid: __________________

The following subcontractors and suppliers will be utilized for portions of the project work. Changes shall not be made subsequent to the bid unless the change(s) is approved by the Owner.

<table>
<thead>
<tr>
<th>Subcontractor</th>
<th>Classification of Work</th>
<th>Estimated Dollar Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Estimated Dollar Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>


ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Metro Waste Authority
300 East Locust Street, Suite 100
Des Moines, IA  50309

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.

2.02 BIDDER will sign and deliver the required number of counterpart s of the AGREEMENT with the Bonds and other documents required by the Bidding Requirements within 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:

<table>
<thead>
<tr>
<th>Addendum No.</th>
<th>Addendum, Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 all drawings of physical conditions relating to existing surface or subsurface structures at MCTS 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.

K. Bidder has examined and carefully prepared the proposal from the Bidding Documents and has checked the same in detail before submitting this Bid.

L. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Contract.

M. Bidder agrees to waive any claim it has or may have against the Owner, the Engineer and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of the Bid.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

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

ARTICLE 5 – BASIS OF BID

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

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Estimated Quantity</th>
<th>Unit</th>
<th>Bid Unit Price</th>
<th>Bid Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Mobilization, demobilization, and all work not included in Bid Item Nos. 102, 103, 104, 105, 106, 107, 108, and 109, 110, 111, and 112.</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>MCTS Floor removal</td>
<td>50</td>
<td>CY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>MCTS floor replacement</td>
<td>206</td>
<td>CY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>MCTS trench drain removal</td>
<td>25</td>
<td>CY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>MCTS trench drain replacement</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>MCTS push wall extension</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>MCTS hopper skirt repair</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>Alternate 1. Refueling Island Design, Procurement, and Installation</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>Alternate 2. Semi-trailer turnout lane</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>Alternate 3 Stormwater drainage replacement</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>111</td>
<td>Remove/Replace Unsuitable Soils</td>
<td>200</td>
<td>CY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>Remove decommissioned equipment and materials</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Total of Lump Sum and Unit Price Bids = Total Bid Price $ ___________________________

(numerals)

(words)
5.02 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.

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

ARTICLE 6 – ATTACHMENTS TO THIS BID

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

A. Required Bid security;

B. List of Project References;

C. 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;

D. Required Bidder Qualification Statement with supporting data.

ARTICLE 7 – DEFINED TERMS

7.01 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 8 – 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: ________________________________

State Contractor’s License No.: ________________________________  
(Where applicable)

END OF BID FORM
SECTION 00 43 50
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 (Seal) SURETY (Seal)

Bidder’s Name and Corporate Seal

Surety’s Name and Corporate Seal

By: By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: Attest:

Signature

Signature

Title

Title

Note: Addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venture’s, 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 any difference between the total amount of Bidder’s Bid and the total amount of the Bid of the next lowest, responsible Bidder that submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:

1.1 If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and

1.2 In no event shall Bidder’s and Surety’s obligation hereunder exceed the penal sum set forth on the face of this Bond.

1.3 Recovery 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 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.
### SECTION 00 45 10
QUALIFICATION STATEMENT
FOR
METRO WASTE AUTHORITY
PROJECT P-53 – MCTS TIPPING FLOOR REPAIR DESIGN

<table>
<thead>
<tr>
<th>THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXENT PERMITTED BY LAWS AND REGULATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SUBMITTED BY:</td>
</tr>
<tr>
<td>2. SUBMITTED TO:</td>
</tr>
<tr>
<td>3. SUBMITTED FOR:</td>
</tr>
<tr>
<td>4. CONTRACTOR'S CONTACT INFORMATION:</td>
</tr>
</tbody>
</table>

Note: Contractors who do not complete the following questionnaire are subject to being deemed “non-responsive”.

1. **SUBMITTED BY:**
   - **Official Name of Firm:**
   - **Address:**

2. **SUBMITTED TO:**

3. **SUBMITTED FOR:**
   - **Owner:**
   - **Project Name:**

4. **TYPE OF WORK:**

4. **CONTRACTOR'S CONTACT INFORMATION:**
   - **Contact Person:**
   - **Title:**
   - **Phone:**
   - **Email:**
5. **AFFILIATED COMPANIES:**

<table>
<thead>
<tr>
<th>Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td></td>
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</tbody>
</table>

6. **CONTRACTOR INFORMATION:**

All other names under which Contractor has operated in the past five (5) years.

<p>| | |</p>
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</table>

Federal Employee Identification Number: ____________________________

7. **TYPE OF ORGANIZATION (Check one):**

<table>
<thead>
<tr>
<th>☐</th>
<th>SOLE PROPRIETORSHIP</th>
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<tbody>
<tr>
<td>☐</td>
<td>PARTNERSHIP</td>
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</tbody>
</table>

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<th></th>
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</thead>
<tbody>
<tr>
<td>Name of Owner:</td>
<td></td>
</tr>
<tr>
<td>Doing Business As:</td>
<td></td>
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<tr>
<td>Date of Organization:</td>
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</tbody>
</table>

<p>| | |</p>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Organization:</td>
<td></td>
</tr>
<tr>
<td>Type of Partnership:</td>
<td></td>
</tr>
<tr>
<td>Name of General Partner(s):</td>
<td></td>
</tr>
</tbody>
</table>
☐ CORPORATION

State of Organization: ________________________________

Date of Organization: ________________________________

Executive Officers:

- President: ________________________________

- Vice President(s): ________________________________

- Treasurer: ________________________________

- Secretary: ________________________________

☐ LIMITED LIABILITY COMPANY

State of Organization: ________________________________

Date of Organization: ________________________________

Members:

______________________________

______________________________

______________________________
<table>
<thead>
<tr>
<th>1</th>
<th>JOINT VENTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>State of Organization:</td>
</tr>
<tr>
<td>3</td>
<td>Date of Organization:</td>
</tr>
<tr>
<td>4</td>
<td>Form of Organization:</td>
</tr>
<tr>
<td>5</td>
<td>Joint Venture Managing Partner</td>
</tr>
<tr>
<td>6</td>
<td>- Name:</td>
</tr>
<tr>
<td>7</td>
<td>- Address:</td>
</tr>
<tr>
<td>8</td>
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<td>10</td>
<td>Joint Venture Managing Partner</td>
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<td>11</td>
<td>- Name:</td>
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<tr>
<td>12</td>
<td>- Address:</td>
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<tr>
<td>13</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Joint Venture Managing Partner</td>
</tr>
<tr>
<td>15</td>
<td>- Name:</td>
</tr>
<tr>
<td>16</td>
<td>- Address:</td>
</tr>
<tr>
<td>17</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>8. REGISTRATION (Iowa Code Chapter 91C)</td>
</tr>
<tr>
<td>19</td>
<td>Contractor Registration Number:</td>
</tr>
<tr>
<td>20</td>
<td>Full Names of Registration Holders (as per Iowa Construction Contractor Registration requirements):</td>
</tr>
<tr>
<td>21</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Contractor Registration Expiration Date:</td>
</tr>
</tbody>
</table>
9. LICENSING:

| Jurisdiction: |  |
| Type of License: |  |
| License Number: |  |
| Jurisdiction: |  |
| Type of License: |  |
| License Number: |  |

10. CERTIFICATIONS:

| Disadvantage Business Enterprise: |  |
| Minority Business Enterprise: |  |
| Woman Owned Enterprise: |  |
| Small Business Enterprise: |  |
| Other (_______________________): |  |

11. BONDING INFORMATION:

| Bonding Company: |  |
| Address: |  |
| Bonding Agent: |  |
| Address: |  |
| Contact Name: |  |
| Phone: |  |
| Aggregate Bonding Capacity: |  |
Available Bonding Capacity as of date of this submittal: _______________________

12. FINANCIAL INFORMATION:

Financial Institution: ________________________________________________

Address: ____________________________________________________________

______________________________________________________________

Account Manager: ____________________________________________________

Phone: ______________________________________________________________

Indicate approximate total bonding capacity of Contractor:

$500,000 - $2,000,000

$2,000,000 - $5,000,000

$5,000,000 - $10,000,000

*INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE LAST 3 YEARS

13. SUSPENSION, REVOCATION, DEBARMENT:

a. Has Contractor’s Registration ever been suspended or revoked in any jurisdiction?

□ Yes □ No

If Yes, provide information regarding suspension/revocation and attach all relevant documents.

b. Within the past five (5) years, has Contractor been debarred by any federal, state or local governmental entity from bidding on projects?

□ Yes □ No

If Yes, provide information regarding debarment and attach all relevant documents.

14. CONSTRUCTION EXPERIENCE:

a. On Schedule A or an equivalent attachment, provide details of projects currently under construction by Contractor (If joint venture, list participant’s projects separately).
b. On Schedule B or an equivalent attachment, identify the individuals Contractor intends to be Officer in Charge, Project Manager, Project Superintendent, and any other key personnel on this Project. Include a resume and/or recent work history for each identified individual.

c. On Schedule C or an equivalent attachment, for work Contractor intends to self-perform on the Project, specify the level of training and experience each of Contractor’s employees have had. Further indicate whether any such training has been in a United States Department of Labor (“DOL”) certified apprentice program. In the event Contractor intends to utilize apprentice workers on the Project, Contractor must be able to provide, upon Owner’s request, documentation that each apprentice worker utilized on the Project is properly registered as participating in a DOL certified apprentice program.

d. On Schedule D or an equivalent attachment, list Contractor’s last five (5) completed projects and for each, the scheduled completion date and final completion date, noting any owner-approved extensions.

e. Has Contractor ever defaulted on a contract, or been disqualified, removed or otherwise prevented from bidding on, or completing any project?
   □ Yes □ No
   If yes, provide the year of the incident, name and address, phone number of the Owner of the project, the project name and location on an attachment.

f. Has Contractor ever failed to complete any work awarded to it?
   □ Yes □ No
   If yes, provide the year of the incident, name and address, phone number of the Owner of the project, the project name and location on an attachment.

g. Has any corporate officer, partner, joint venture participant or proprietor of Contractor ever failed to complete a construction contract awarded to him or her in his or her own name or when acting as a principal of another organization?
   □ Yes □ No
   If yes, provide the year of the incident, name and address, phone number of the Owner of the project, the project name and location on an attachment.

h. In the last five (5) years, has Contractor ever failed to substantially complete a project in a timely manner?
   □ Yes □ No
   If yes, provide the year of the incident, name and address, phone number of the Owner of the project, the project name and location on an attachment.

i. Does Contractor have projects not listed on Schedule A which commenced within the past four (4) years and have not reached final completion?
   □ Yes □ No
   If yes, provide the year of the incident, name and address, phone number of the Owner of the project, the project name and location.
j. Has Contractor ever been unable to obtain a bond or been denied a bond?
   □ Yes □ No
   If yes, provide all relevant details on an attachment.

k. On Schedule E, provide names of all surety/bonding companies Contractor
   has utilized in the past five (5) years. Include agent’s name, address and
   phone number.

l. Has Contractor ever declared bankruptcy or been in receivership?
   □ Yes □ No
   If yes, provide all relevant details on an attachment.

m. Is Contractor currently being investigated for or previously been found to
   have violated in the last five (5) years any of the following state or federal
   laws: Iowa Minimum Wage Act, Iowa Non-English Speaking Employees
   Act, Iowa Child Labor Act, Iowa Labor Commissioner’s Right to Inspect
   Premises, Iowa Compensation Insurance Act, Employment Security Act,
   Iowa Competition Act, Iowa Income, Corporate and Sales Tax Code, a
   “willful” violation of the Iowa or Federal Occupational Safety and Health
   Act, Iowa Employee Registration Requirements, Iowa Hazardous Chemical
   Risks Act, Iowa Wage Payment Collection Act, Federal Income and
   Standards Act:
   □ Yes □ No
   If yes, provide all relevant details on an attachment.

n. Are there any judgments, arbitration proceedings or suits pending or
   outstanding against Contractor or its officers?
   □ Yes □ No
   If yes, provide all relevant details on an attachment.

o. Has Contractor filed any lawsuit or demanded arbitration with regard to any
   construction contract within the past five (5) years?
   □ Yes □ No
   If yes, provide all relevant details on an attachment.

p. Has Contractor been found by a court or agency of competent jurisdiction to
   be delinquent in meeting its obligations under local, state or federal tax laws
   within the last five (5) years? For purposes of this Question, “delinquent”
   shall include, but is not limited to, failure to file, failure to pay, or imposition
   of tax liens.
   □ Yes □ No
   If yes, provide all relevant details on an attachment.

q. Contractor affirms that it will retain only subcontractors who can fully
   comply with the Bid Specifications.
   □ Yes □ No
r. Contractor affirms that it will be responsible for ensuring that each subcontractor meets quality assurance Specifications as presented in the Bid Specifications.
□ Yes □ No

s. Contractor agrees to submit to Owner a list of all intended subcontractors at the time of bid. In the event Contractor wants to replace any originally-designated subcontractor, such may occur only with the approval of Owner. Such approval will not be unreasonably withheld.
□ Yes □ No

t. Contractor attests that it will comply with each of the following:

Iowa Minimum Wage Law:
□ Yes □ No

Maintain workers’ compensation insurance or be qualified as a self-insurer and provide proof of insurance or ability to self-insure upon request:
□ Yes □ No

Properly license all Contractor employees with the appropriate licensing authority:
□ Yes □ No

u. Contractor will make available to Owner or its representative, upon request, documentation necessary to satisfy Owner, in its sole discretion, that Contractor’s workers utilized on this Project are actual employees, with unemployment and worker’s compensation coverage, and are not “leased employees” or independent contractors.
□ Yes □ No

v. Contractor will provide with this Statement of Bidder’s Qualifications, the name, address, phone number and name of a contact person for three (3) entities that will provide references for Contractor.
□ Yes □ No

15. SAFETY PROGRAM:

a. Contractor will only utilize on-site employees who have completed the Occupational Safety and Health Act (OSHA) 10 Hour Construction Industry Training Program.
□ Yes □ No
b. State the general type(s) of work performed by Contractor with its own work force.


c. Describe Contractor’s permanent safety program, and provide name(s) of individual(s) responsible for safety procedures on this Project.


d. Name of Contractor's Safety Officer: ____________________________


e. Provide the following as attachments for (x) Contractor and (y) Contractor's proposed subcontractors and suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid:

i. OSHA No. 500-Log and Summary of Occupational Injuries & Illnesses for the past five (5) years.
   □ See Attachment(s) □ None

ii. List of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last five (5) years (indicate disposition as applicable).
   □ See Attachment(s) □ None

iii. List of all safety citations or violations under any state all received within the last five (5) years (indicate disposition as applicable).
   □ See Attachment(s) □ None
f. Provide the following for (x) Contractor and (y) Contractor's proposed subcontractors and suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid:

i. Workers' compensation Experience Modification Rate ("EMR") for the last five (5) years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>EMR</th>
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ii. Total Recordable Frequency Rate ("TRFR") for the last five (5) years:

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<thead>
<tr>
<th>YEAR</th>
<th>TRFR</th>
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iii. Total number of man-hours worked for the last five (5) Years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL NUMBER OF MAN-HOURS</th>
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</table>

iv. Days Away From Work, Days of Restricted Work Activity or Job Transfer ("DART") incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last five (5) years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DART</th>
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I hereby certify that: (1) all the information submitted in this Qualifications Statement, including any attachments, is true to the best of my knowledge and belief; (2) I am authorized to sign this Qualifications Statement on behalf of the Contractor whose name appears in Question 1 above; and (3) if any of the information I have provided herein becomes inaccurate, prior to execution of any Project contract, I will immediately provide Owner with updated accurate information in writing.

NAME OF ORGANIZATION: ______________________________

BY: ______________________________

TITLE: ______________________________

DATED: ______________________________

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS _________ DAY OF _________, 20___

NOTARY PUBLIC - STATE OF _____________

MY COMMISSION EXPIRES: _____________

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Contractor Key Personnel).
3. Schedule C (Contractor Employees – Level of Training and Experience).
5. Schedule E (Surety/Bonding Companies Contractor Utilized in Past Five (5) Years).
6. Audited balance sheet for each of the last 3 years for Contractor.
7. Evidence of authority for individuals in Section 7 to bind organization to an agreement.
8. Resumes of officers and key individuals (including Safety Officer) of Contractor.
9. Required safety program submittals listed in Section 15(e).
10. Additional items as pertinent.

END OF SECTION
<table>
<thead>
<tr>
<th>Project Name</th>
<th>Owner's Contact Person</th>
<th>Design Engineer</th>
<th>Contract Date</th>
<th>Type of Work</th>
<th>Status</th>
<th>Cost of Work</th>
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# SCHEDULE B
CONTRACTOR KEY PERSONNEL

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
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<tbody>
<tr>
<td>Officer in Charge</td>
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<td>Project Manager</td>
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<td>Project Superintendent</td>
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### SCHEDULE C
CONTRACTOR EMPLOYEES – LEVEL OF TRAINING AND EXPERIENCE

<table>
<thead>
<tr>
<th>Employee Name</th>
<th>Level of Training</th>
<th>Experience</th>
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</table>
**SCHEDULE D**  
**CONTRACTOR’S LAST FIVE (5) COMPLETED PROJECTS**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Owner's Contact Person</th>
<th>Project Location and Description</th>
<th>Scheduled Completion Date</th>
<th>Final Completion Date</th>
<th>Owner-Approved Extension?</th>
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# SCHEDULE E
SURETY/BONDING COMPANIES CONTRACTOR UTILIZED IN PAST 5 YEARS

<table>
<thead>
<tr>
<th>Name of Surety/Bonding Company</th>
<th>Agent’s Name, Address, Phone Number</th>
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THIS AGREEMENT is by and between Metro Waste Authority ("Owner") and ____________________________ ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Replacement of the entire facility tipping floor at Metro Central Transfer Station (MCTS) throughout the interior with a high strength concrete topping. As part of the floor replacement project, the existing trench drain system shall be removed and replaced, the push wall will be extended, the hopper skirt repaired. The tipping floor replacement and other Work internal to MCTS shall be completed in phases. The existing fueling island shall be removed and a new fuel island relocated as shown on the Drawings. Fuel shall be available at all times for MCTS operation during Phase 1 and upon substantial completion of Phase 2 of the internal Work to MCTS. Alternates which may be completed with this project include a semi-trailer turnout lane addition, and storm water drainage replacement completed on the north side of the transfer station.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: P-53 MCTS Tipping Floor Repair Design Metro Central Transfer Station.

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work, and which is not designated as delegated design to be completed by the Contractor, has been designed by HDR Engineering, Inc. (Design Engineer). The Owner has retained HDR Engineering, Inc. to act as Owner’s construction quality assurance consultant for the Project.

3.02 Both the Design Engineer and the construction quality assurance consultant ("Engineer") is to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence

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

A. The Work, including all Work within the MCTS building, including concrete curing as approved by the Engineer, will be substantially completed on or before November 28, 2017 such that the transfer station can return to intended use.

B. All Work, including all Work external to the MCTS, shall be substantially completed on or before December 7, 2017.

C. All Work shall be completed including completion of punchlist, final walkdown and ready for final payment on or before December 29, 2017.

4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion of all Work within the MCTS building and return of the transfer station to intended use: Contractor shall pay Owner $2,500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.

2. Substantial Completion of all Work external to the MCTS building: Contractor shall pay Owner $250.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.B above for Substantial Completion until the Work is substantially complete.

3. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work specified in Paragraph 4.02.C above within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $25.00 for each day that expires after such time until the Work is completed and ready for final payment.

4. Liquidated damages for failing to timely attain Substantial Completion are for separate Work tasks and final completion are additive and will be imposed concurrently.

B. The daily bonus for early Substantial Completion of all Work within the MCTS building and return of the transfer station to intended use: Owner shall pay Contractor $25,000.00 for each planned operating day prior to the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion up to a limit of $15,000.00.

ARTICLE 5 – CONTRACT PRICE

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

A. For all Work other than Unit Price Work, a lump sum of: $[______________].

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.
B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

\[
\text{Unit Price Work}
\]

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Extended Price</th>
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<tbody>
<tr>
<td>102</td>
<td>MCTS Floor removal</td>
<td>CY</td>
<td>50</td>
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<tr>
<td>103</td>
<td>MCTS Floor replacement</td>
<td>CY</td>
<td>206</td>
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<tr>
<td>104</td>
<td>MCTS Trench drain removal</td>
<td>CY</td>
<td>25</td>
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<tr>
<td>1119</td>
<td>Remove/Replace Unsuitable Soils</td>
<td>CY</td>
<td>200</td>
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</table>

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

C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment)

$[\_\_\_\_\_\_\_\_\_]$

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

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

6.02 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor’s Applications for Payment each month, in accordance with Paragraph 15.01(D) of the General Conditions, during performance of the Work as provided in Paragraph 6.02.A.1 below and in accordance with Iowa Code Chapter 573, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

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

a. Ninety-five (95) percent of Work completed (with the balance being retainage); and
b. Ninety-five (95) percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage)

6.03 Final Payment

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price in accordance with Iowa Code Chapter 573 and as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate in effect under Iowa Code section 12C.6, as of the day interest begins to accrue.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and all drawings of physical conditions relating to existing surface or subsurface structures at MCTS 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 MCTS that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to [ ], inclusive).

2. Performance bond (pages [ ] to [ ] inclusive).

3. Payment bond (pages [ ] to [ ] inclusive).

4. General Conditions (pages [ ] to [ ], inclusive).

5. Supplementary Conditions (pages [ ] to [ ], inclusive).


7. Drawings consisting of [ ] sheets with each sheet bearing the following general title:

   [ ]

8. Addenda (numbers [ ] to [ ], inclusive).

9. Exhibits to this Agreement (enumerated as follows):

   a. Contractor’s Bid (pages [ ] to [ ], inclusive).

10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:

    a. Notice to Proceed.

    b. Work Change Directives.

    c. Change Orders.

    d. Field Orders.

B. The documents listed in Paragraph 9.01.A are NOT attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.
10.02  Assignment of Contract

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

10.03  Successors and Assigns

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

10.04  Severability

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

10.05  Contractor’s Certifications

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive
practices in competing for or in executing the Contract. For the purposes of this Paragraph
10.05:

1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of
value likely to influence the action of a public official in the bidding process or in the
Contract execution;

2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to
influence the bidding process or the execution of the Contract to the detriment of
Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c)
to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders,
with or without the knowledge of Owner, a purpose of which is to establish Bid prices
at artificial, non-competitive levels; and

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

10.06  Other Provisions

A. Owner stipulates that if the General Conditions that are made a part of this Contract are
based on EJCDC® C-700, Standard General Conditions for the Construction Contract,
published by the Engineers Joint Contract Documents Committee®, and if Owner is the
party that has furnished said General Conditions, then Owner has plainly shown all
modifications to the standard wording of such published document to the Contractor, through
a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary
Conditions.
IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

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

OWNER:  

Metro Waste Authority  

By:  

Title: Executive Director  

Attest:  

Address for giving notices:  

Metro Waste Authority  

300 E Locust, Suite 100  

Des Moines, Iowa 50309

CONTRACTOR:  

By:  

Title:  

Attest:  

Address for giving notices:  

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

END OF SECTION
SECTION 00 61 00
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 18

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

Contractor’s Name and Corporate Seal

By:
Signature
Print Name
Title
Attest:
Signature
Title

SURETY

Surety’s Name and Corporate Seal

By: Signature (attach power of attorney)
Print Name
Title
Attest:
Signature
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.
1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

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

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

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

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

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

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

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

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

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

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

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

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

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

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

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

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

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

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, shall not be reduced or set off on account of any such unrelated Construction Contract, and the Balance of the Contract Price obligations of the Contractor that are unrelated to the Contractor.

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 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 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. In accordance with Iowa Code section 573.6, the following provisions shall be held to be a part of this Bond:

16.1 The Contractor and Surety on this Bond hereby agree to pay all persons, firms or corporations having contracts directly with the Contractor or with subcontractors, all just claims due to them for labor performed or materials furnished, in the performance of the contract on account of which this Bond is given, when the same are not satisfied out of the portion of the contract price which the Owner is required to retain until completion of the public improvement, but the Contractor and Surety shall not be liable to said persons, firms, or corporations unless the claims of said claimants against said portion of the contract price shall have been established as provided by law.

16.2 The Surety shall be deemed and held, any contract to the contrary notwithstanding, to consent without notice: (a) to any extension of time to the Contractor in which to perform the contract; (b) to any change in the plans, specifications, or contract, when such change does not involve an increase of more than twenty five percent (25%) of the total contract price, and shall then be released only as to such excess increase; and (c) that no provision of this Bond or of any other contract
shall be valid which limits to less than one (1) year from the time of the acceptance of the work the right to sue on this Bond for defects in the quality of the work or material not discovered or known to the obligee at the time such work was accepted.

17. This Bond shall be governed in accordance with the laws of the State of Iowa.

18. Modifications to this Bond are as follows:
SECTION 00 61 50
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  

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  

Contractor’s Name and Corporate Seal  

By: ________________________ (seal)  

Signature

Print Name

Title

Attest: ________________________

Signature

Title

SURETY

Surety’s Name and Corporate Seal

By: ________________________ (seal)

Signature (attach power of attorney)

Print Name

Title

Attest: ________________________

Signature

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.
1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety’s obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner’s property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety’s expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety’s obligations to a Claimant under this Bond shall arise after the following:

   5.1 Claimants who do not have a direct contract with the Contractor,

   5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done,

   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. In accordance with Iowa Code section 573.6, the following provisions shall be held to be a part of this Bond:

18.1 The Contractor and Surety on this Bond hereby agree to pay all persons, firms or corporations having contracts directly with the Contractor or with subcontractors, all just claims due to them for labor performed or materials furnished, in the performance of the contract on account of which this Bond is given, when the same are not satisfied out of the portion of the contract price which the Owner is required to retain until completion of the public improvement, but the Contractor and Surety shall not be liable to said persons, firms, or corporations unless the claims of said claimants against said portion of the contract price shall have been established as provided by law.

18.2 The Surety shall be deemed and held, any contract to the contrary
notwithstanding, to consent without notice:
(a) to any extension of time to the
Contractor in which to perform the contract;
(b) to any change in the plans,
specifications, or contract, when such
change does not involve an increase of more
than twenty five percent (25%) of the total
contract price, and shall then be released
only as to such excess increase; and (c) that
no provision of this Bond or of any other
contract shall be valid which limits to less
than one (1) year from the time of the
acceptance of the work the right to sue on
this Bond for defects in the quality of the
work or material not discovered or known to
the obligee at the time such work was
accepted.

19. This Bond shall be governed in accordance
with the laws of the State of Iowa.

20. Modifications to this Bond are as follows:
## Contractor's Application for Payment

**Application for Payment No.**

### Application Details:
- **Application Date:**
- **Period:**

### To From (Contractor): Via (Engineer):

### Project:

### Owner:

### Owner's Contract No.: Contractor's Project No.: Engineer's Project No.:

### Net Change by Change Orders:

### Current Contract Price (Line 1 ± 2):

### Total Completed and Stored to Date (Column F total on Progress Estimates):

### Retainage:
- **Work Completed**
- **Stored Material**
- **Total Retainage**

### Amount Eligible to Date (Line 4 - Line 5.c):

### Less Previous Payments (Line 8 or other - attach explanation of the other amount):

### Amount Due This Application:

### Balance to Finish, Plus Retainage (Column G total on Progress Estimates + Line 5.c above):

### Change Orders

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<th>Number</th>
<th>Additions</th>
<th>Deductions</th>
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### Change Order Summary

1. Original Contract Price
2. Net change by Change Orders
3. Current Contract Price (Line 1 ± 2)
4. Total Completed and Stored to Date (Column F total on Progress Estimates)
5. Retainage:
   - Work Completed
   - Stored Material
   - Total Retainage (Line 5.a + Line 5.b)
6. Amount Eligible to Date (Line 4 - Line 5.c)
7. Less Previous Payments (Line 6 from prior Application)
8. Amount Due This Application
9. Balance to Finish, Plus Retainage (Column G total on Progress Estimates + Line 5.c above)

### Contractor's Certification

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

### Payment of:

- $$(Line 8 or other - attach explanation of the other amount)
  - is recommended by: __________ (Engineer) __________ (Date)

### Payment of:

- $$(Line 8 or other - attach explanation of the other amount)
  - is approved by: __________ (Owner) __________ (Date)

### Contractor Signature

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

### MWA Acct. Code:
## Progress Estimate - Lump Sum Work

For (Contract):  
Application Number:  
Application Period:  
Application Date:  

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<th>Scheduled Value ($)</th>
<th>From Previous Application (C+D)</th>
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<th>Materials Presently Stored (not in C or D)</th>
<th>Total Completed and Stored to Date (C + D + E)</th>
<th>% (F / B)</th>
<th>Balance to Finish (B - F)</th>
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EJCDC® C-620 Contractor's Application for Payment  
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## Progress Estimate - Unit Price Work

### Contractor's Application

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<tr>
<th>Bid Item No.</th>
<th>Description</th>
<th>Item Quantity</th>
<th>Units</th>
<th>Unit Price</th>
<th>Total Value of Item ($)</th>
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<td>Description of Materials or Equipment Stored</td>
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**Totals**
# 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 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; contesting Engineer’s decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer’s decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer
has declined to address. A demand for money or services by a third party is not a Claim.

11. **Constituent of Concern**—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. **Contract**—The entire and integrated written contract between the Owner and Contractor concerning the Work.

13. **Contract Documents**—Those items so designated in the Agreement, and which together comprise the Contract.

14. **Contract Price**—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. **Contract Times**—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. **Contractor**—The individual or entity with which Owner has contracted for performance of the Work.

17. **Cost of the Work**—See Paragraph 13.01 for definition.

18. **Drawings**—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. **Effective Date of the Contract**—The date, indicated in the Agreement, on which the Contract becomes effective.

20. **Engineer**—The individual or entity named as such in the Agreement.

21. **Field Order**—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

22. **Hazardous Environmental Condition**—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. **Laws and Regulations; Laws or Regulations**—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. **Liens**—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. **Milestone**—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. **Notice of Award**—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.

27. **Notice to Proceed**—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

28. **Owner**—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

29. **Progress Schedule**—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.

30. **Project**—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

31. **Project Manual**—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

32. **Resident Project Representative**—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.

33. **Samples**—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

34. **Schedule of Submittals**—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.

35. **Schedule of Values**—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

36. **Shop Drawings**—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. **Site**—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

38. **Specifications**—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

39. **Subcontractor**—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

40. **Substantial Completion**—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

41. **Successful Bidder**—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

42. **Supplementary Conditions**—The part of the Contract that amends or supplements these General Conditions.

43. **Supplier**—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

44. **Technical Data**—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

45. **Underground Facilities**—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

46. **Unit Price Work**—Work to be paid for on the basis of unit prices.

47. **Work**—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. **Work Change Directive**—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 **Terminology**

A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. **Intent of Certain Terms or Adjectives**:

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. **Day**:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. **Defective**:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
   
   a. does not conform to the Contract Documents; or

   b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

   c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. **Furnish, Install, Perform, Provide**:

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

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

B. Evidence of Contractor’s Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

C. Evidence of Owner’s Insurance: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 Copies of Documents

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 Before Starting Construction

A. Preliminary Schedules: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

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

2.04 Preconstruction Conference; Designation of Authorized Representatives

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 Initial Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor’s full responsibility therefor.

2. Contractor’s Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor’s Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 Electronic Transmittals

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient’s use of software application packages, operating systems, or
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).

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**3.04 Requirements of the Contract Documents**

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer’s written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.
3.05 **Reuse of Documents**

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner’s express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

**ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

4.01 **Commencement of Contract Times; Notice to Proceed**

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

4.02 **Starting the Work**

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

4.03 **Reference Points**

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

4.04 **Progress Schedule**

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 Delays in Contractor’s Progress

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor’s performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor’s sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and

4. acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

5.01 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor’s operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part.
by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

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

C. **Cleaning:** Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. **Loading of Structures:** Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 **Subsurface and Physical Conditions**

A. **Reports and Drawings:** The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and

3. Technical Data contained in such reports and drawings.

B. **Reliance by Contractor on Technical Data Authorized:** Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.
5.04  Differing Subsurface or Physical Conditions

A.  Notice by Contractor: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1.  is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or

2.  is of such a nature as to require a change in the Drawings or Specifications; or

3.  differs materially from that shown or indicated in the Contract Documents; or

4.  is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

B.  Engineer’s Review: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner’s obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations.

C.  Owner’s Statement to Contractor Regarding Site Condition: After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations, in whole or in part.

D.  Possible Price and Times Adjustments:

1.  Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:

   a.  such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

   b.  with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
c. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
   a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
   b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor’s making such commitment; or
   c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner’s issuance of the Owner’s written statement to Contractor regarding the subsurface or physical condition in question.

5.05 Underground Facilities

A. Contractor’s Responsibilities: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
   a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
   b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
   c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
   d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. Notice by Contractor: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after
becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

C. **Engineer’s Review**: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. **Owner’s Statement to Contractor Regarding Underground Facility**: After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations in whole or in part.

E. **Possible Price and Times Adjustments**:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
   a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
   b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
   c. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times; and
   d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor’s entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner’s issuance of the Owner’s written statement to Contractor regarding the Underground Facility in question.
5.06 **Hazardous Environmental Conditions at Site**

A. **Reports and Drawings:** The Supplementary Conditions identify:

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

2. Technical Data contained in such reports and drawings.

B. **Reliance by Contractor on Technical Data Authorized:** Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner’s written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.
ARTICLE 6 – BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor’s obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

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

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 Insurance—General Provisions

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is
maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner’s termination rights under Article 16.

H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party’s interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor’s interests.

J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor’s liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 Contractor’s Insurance

A. Workers’ Compensation: Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance for:

1. claims under workers’ compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers’ Compensation Act and Jones Act coverage (if applicable).

3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor’s employees (by stop-gap endorsement in monopolist worker’s compensation states).
4. Foreign voluntary worker compensation (if applicable).

B. Commercial General Liability—Claims Covered: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees.
2. claims for damages insured by reasonably available personal injury liability coverage.
3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

C. Commercial General Liability—Form and Content: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:
   a. Such insurance shall be maintained for three years after final payment.
   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.

3. Broad form property damage coverage.

4. Severability of interest.

5. Underground, explosion, and collapse coverage.

6. Personal injury coverage.

7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 01 and CG 20 37 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.

D. Automobile liability: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

E. Umbrella or excess liability: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. Contractor’s pollution liability insurance: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result
of pollution conditions arising from Contractor’s operations and completed operations. This
insurance shall be maintained for no less than three years after final completion.

G. **Additional insureds:** The Contractor’s commercial general liability, automobile liability,
umbrella or excess, and pollution liability policies shall include and list as additional
insureds Owner and Engineer, and any individuals or entities identified in the
Supplementary Conditions; include coverage for the respective officers, directors,
members, partners, employees, agents, consultants, and subcontractors of each and any of
all such additional insureds; and the insurance afforded to these additional insureds shall
provide primary coverage for all claims covered thereby (including as applicable those
arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. **Contractor’s professional liability insurance:** If Contractor will provide or furnish
professional services under this Contract, through a delegation of professional design
services or otherwise, then Contractor shall be responsible for purchasing and maintaining
applicable professional liability insurance. This insurance shall provide protection against
claims arising out of performance of professional design or related services, and caused by
a negligent error, omission, or act for which the insured party is legally liable. It shall be
maintained throughout the duration of the Contract and for a minimum of two years after
Substantial Completion. If such professional design services are performed by a
Subcontractor, and not by Contractor itself, then the requirements of this paragraph may
be satisfied through the purchasing and maintenance of such insurance by such
Subcontractor.

I. **General provisions:** The policies of insurance required by this Paragraph 6.03 shall:

1. include at least the specific coverages provided in this Article.

2. be written for not less than the limits of liability provided in this Article and in the
Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

3. contain a provision or endorsement that the coverage afforded will not be canceled,
materially changed, or renewal refused until at least 10 days prior written notice has
been given to Contractor. Within three days of receipt of any such written notice,
Contractor shall provide a copy of the notice to Owner, Engineer, and each other
insured under the policy.

4. remain in effect at least until final payment (and longer if expressly required in this
Article) and at all times thereafter when Contractor may be correcting, removing, or
replacing defective Work as a warranty or correction obligation, or otherwise, or
returning to the Site to conduct other tasks arising from the Contract Documents.

5. be appropriate for the Work being performed and provide protection from claims that
may arise out of or result from Contractor’s performance of the Work and Contractor’s
other obligations under the Contract Documents, whether it is to be performed by
Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly
employed by any of them to perform any of the Work, or by anyone for whose acts
any of them may be liable.

J. The coverage requirements for specific policies of insurance must be met by such policies,
and not by reference to excess or umbrella insurance provided in other policies.
6.04 Owner’s Liability Insurance

A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner’s option, may purchase and maintain at Owner’s expense Owner’s own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

B. Owner’s liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner’s liability policies for any of Contractor’s obligations to the Owner, Engineer, or third parties.

6.05 Property Insurance

A. Builder’s Risk: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder’s risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder’s risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as “insureds.”

2. be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).

6. extend to cover damage or loss to insured property while in transit.

7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

8. allow for the waiver of the insurer’s subrogation rights, as set forth below.

9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.

10. not include a co-insurance clause.

11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.

12. include performance/hot testing and start-up.

13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. Notice of Cancellation or Change: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

C. Deductibles: The purchaser of any required builder’s risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

D. Partial Occupancy or Use by Owner: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder’s risk policy, or through Contractor) will provide notice of such occupancy or use to the builder’s risk insurer. The builder’s risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder’s risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.

E. Additional Insurance: If Contractor elects to obtain other special insurance to be included in or supplement the builder’s risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor’s expense.

F. Insurance of Other Property: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.
6.06 Waiver of Rights

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder’s risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner’s property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder’s risk insurance and any other property insurance applicable to the Work.

6.07 Receipt and Application of Property Insurance Proceeds

A. Any insured loss under the builder’s risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the
policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder’s risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

**ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES**

**7.01 Supervision and Superintendence**

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

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

**7.02 Labor; Working Hours**

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner’s written consent, which will not be unreasonably withheld.

**7.03 Services, Materials, and Equipment**

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and
guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

7.04 “Or Equals”

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or equal” item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an “or equal” item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

   a. in the exercise of reasonable judgment Engineer determines that:

      1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

      2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

      3) it has a proven record of performance and availability of responsive service; and

      4) it is not objectionable to Owner.

   b. Contractor certifies that, if approved and incorporated into the Work:

      1) there will be no increase in cost to the Owner or increase in Contract Times; and

      2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. Contractor’s Expense: Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.

C. Engineer’s Evaluation and Determination: Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal”, which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
D. **Effect of Engineer’s Determination:** Neither approval nor denial of an “or-equal” request shall result in any change in Contract Price. The Engineer’s denial of an “or-equal” request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. **Treatment as a Substitution Request:** If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 **Substitutes**

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
   a. shall certify that the proposed substitute item will:
      1) perform adequately the functions and achieve the results called for by the general design,
      2) be similar in substance to that specified, and
      3) be suited to the same use as that specified.
   b. will state:
      1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
      2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
      3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
   c. will identify:
      1) all variations of the proposed substitute item from that specified, and
2) available engineering, sales, maintenance, repair, and replacement services.

d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. Engineer's Evaluation and Determination: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer’s determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. Special Guarantee: Owner may require Contractor to furnish at Contractor’s expense a special performance guarantee or other surety with respect to any substitute.

D. Reimbursement of Engineer’s Cost: Engineer will record Engineer’s costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. Contractor’s Expense: Contractor shall provide all data in support of any proposed substitute at Contractor’s expense.

F. Effect of Engineer’s Determination: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer’s denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor’s Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner’s requirement of replacement.

G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 Permits

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

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

7.10  **Laws and Regulations**

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

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor’s responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor’s obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor’s Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11  **Record Documents**

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

7.12  **Safety and Protection**

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

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

C. Contractor shall comply with the applicable requirements of Owner’s safety programs, if any. The Supplementary Conditions identify any Owner’s safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor’s safety program with which Owner’s and Engineer’s employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor’s duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

G. Contractor’s duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 Safety Representative

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

7.14 Hazard Communication Programs

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

7.15 **Emergencies**

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

7.16 **Shop Drawings, Samples, and Other Submittals**

A. **Shop Drawing and Sample Submittal Requirements:**

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
   a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
   b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
   c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
   d. determined and verified all information relative to Contractor’s responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor’s obligations under the Contract Documents with respect to Contractor’s review of that submittal, and that Contractor approves the submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

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

1. **Shop Drawings:**
   a. Contractor shall submit the number of copies required in the Specifications.
   b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to
provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

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

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

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

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

E. Resubmittal Procedures:

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

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer’s time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer’s charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer’s charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 Contractor’s General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor’s warranty and guarantee.

B. Contractor’s warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal;

6. the issuance of a notice of acceptability by Engineer;

7. any inspection, test, or approval by others; or

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

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer’s officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

   1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

   2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor’s responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop
Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional’s written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this paragraph, Engineer’s review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer’s review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 Other Work

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner’s employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner’s employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner’s employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others’ work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor’s Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor’s Work. Contractor’s failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor’s Work except for latent defects and deficiencies in such other work.
8.02 **Coordination**

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner’s employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
2. an itemization of the specific matters to be covered by such authority and responsibility; and
3. the extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 **Legal Relationships**

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner’s employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor’s rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work within the Contract Times.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner’s contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

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

ARTICLE 9 – OWNER’S RESPONSIBILITIES

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

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

9.03 Furnish Data
A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 Pay When Due
A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

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

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

9.07 Change Orders
A. Owner’s responsibilities with respect to Change Orders are set forth in Article 11.
9.08 Inspections, Tests, and Approvals
   A. Owner’s responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

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

9.10 Undisclosed Hazardous Environmental Condition
   A. Owner’s responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

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

9.12 Safety Programs
   A. While at the Site, Owner’s employees and representatives shall comply with the specific applicable requirements of Contractor’s safety programs of which Owner has been informed.

   B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

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

10.02 Visits to Site
   A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

   B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during
or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 Project Representative

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

10.04 Rejecting Defective Work

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

10.05 Shop Drawings, Change Orders and Payments

A. Engineer’s authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

B. Engineer’s authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.

C. Engineer’s authority as to Change Orders is set forth in Article 11.

D. Engineer’s authority as to Applications for Payment is set forth in Article 15.

10.06 Determinations for Unit Price Work

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

10.07 Decisions on Requirements of Contract Documents and Acceptability of Work

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

10.08 Limitations on Engineer’s Authority and Responsibilities

A. Neither Engineer’s authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor’s failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer’s review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 Compliance with Safety Program

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

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

11.01 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

1. Change Orders:

   a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.

   b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. Work Change Directives: A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive’s effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an
adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

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

### 11.02 Owner-Authorized Changes in the Work

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

### 11.03 Unauthorized Changes in the Work

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

### 11.04 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on
the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor’s fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. **Contractor’s Fee**: When applicable, the Contractor’s fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
   
a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor’s fee shall be 15 percent;

   b. for costs incurred under Paragraph 13.01.B.3, the Contractor’s fee shall be five percent;

   c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor’s fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

   d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

   e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor’s fee by an amount equal to five percent of such net decrease; and

   f. when both additions and credits are involved in any one change, the adjustment in Contractor’s fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor’s progress.

11.06 *Change Proposals*

A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under
the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. **Procedures**: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. **Engineer’s Action**: Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor’s supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer’s inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. **Binding Decision**: Engineer’s decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

B. **Resolution of Certain Change Proposals**: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 **Execution of Change Orders**

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner’s acceptance of defective Work under Paragraph 14.04 or Owner’s correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer’s recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 Notification to Surety

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

ARTICLE 12 – CLAIMS

12.01 Claims

A. Claims Process: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by Owner or Contractor of Engineer’s decisions regarding Change Proposals;
2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

B. Submittal of Claim: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor’s knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. Review and Resolution: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. Mediation:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim
submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator’s fees and costs.

E. **Partial Approval**: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. **Denial of Claim**: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. **Final and Binding Results**: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

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

13.01 **Cost of the Work**

A. **Purpose 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, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor’s principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor’s fee.

2. Expenses of Contractor’s principal and branch offices other than Contractor’s office at the Site.

3. Any part of Contractor’s capital expenses, including interest on Contractor’s capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

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

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

13.02 Allowances

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

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor’s costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. **Contingency Allowance:** Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 **Unit Price Work**

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor’s overhead and profit for each separately identified item.

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

E. Within 30 days of Engineer’s written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.
ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 Access to Work

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

14.02 Tests, Inspections, and Approvals

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner’s and Engineer’s acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor’s purchase thereof for incorporation in the Work.

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

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor’s expense unless Contractor had given Engineer timely notice of Contractor’s intention to
cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 **Defective Work**

A. **Contractor’s Obligation:** It is Contractor’s obligation to assure that the Work is not defective.

B. **Engineer’s Authority:** Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. **Notice of Defects:** Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. **Correction, or Removal and Replacement:** Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. **Preservation of Warranties:** When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner’s special warranty and guarantee, if any, on said Work.

F. **Costs and Damages:** In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 **Acceptance of Defective Work**

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

14.05 **Uncovering Work**

A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer’s observation, and then replace the covering, all at Contractor’s expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer’s request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor’s full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 Owner May Stop the Work

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

14.07 Owner May Correct Defective Work

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

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor’s services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner’s representatives, agents and employees, Owner’s other contractors, and Engineer and Engineer’s consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will
include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor’s defective Work.

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

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

15.01 Progress Payments

A. Basis for Progress Payments: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. Applications for Payments:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner’s interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor’s legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer’s reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer’s recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer’s observations of the executed Work as an experienced and qualified design professional, and on Engineer’s review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer’s knowledge, information and belief:
a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor’s being entitled to such payment appear to have been fulfilled in so far as it is Engineer’s responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer’s review of Contractor’s Work for the purposes of recommending payments nor Engineer’s recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or

   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

   c. for Contractor’s failure to comply with Laws and Regulations applicable to Contractor’s performance of the Work, or

   d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or

   e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer’s opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer’s opinion to protect Owner from loss because:

   a. the Work is defective, requiring correction or replacement;

   b. the Contract Price has been reduced by Change Orders;

   c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due:

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

E. Reductions in Payment by Owner:

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

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount
remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

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

15.02 Contractor’s Warranty of Title

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

15.03 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor’s notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner’s objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner’s use or occupancy of the Work following Substantial Completion, review the builder’s risk insurance policy with respect to the end of the builder’s risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner’s use or occupancy of the Work.
E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 Partial Use or Occupancy

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.

2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder’s risk or other property insurance.

15.05 Final Inspection

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

15.06 Final Payment

A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of
inspection, annotated record documents (as provided in Paragraph 7.11), and other
documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously
delivered) by:
   a. all documentation called for in the Contract Documents;
   b. consent of the surety, if any, to final payment;
   c. satisfactory evidence that all title issues have been resolved such that title to all
      Work, materials, and equipment has passed to Owner free and clear of any Liens
      or other title defects, or will so pass upon final payment.
   d. a list of all disputes that Contractor believes are unsettled; and
   e. complete and legally effective releases or waivers (satisfactory to Owner) of all
      Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as
   approved by Owner, Contractor may furnish receipts or releases in full and an affidavit
   of Contractor that: (a) the releases and receipts include all labor, services, material,
   and equipment for which a Lien could be filed; and (b) all payrolls, material and
   equipment bills, and other indebtedness connected with the Work for which Owner
   might in any way be responsible, or which might in any way result in liens or other
   burdens on Owner's property, have been paid or otherwise satisfied. If any
   Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor
   may furnish a bond or other collateral satisfactory to Owner to indemnify Owner
   against any Lien, or Owner at its option may issue joint checks payable to Contractor
   and specified Subcontractors and Suppliers.

B. Engineer’s Review of Application and Acceptance:

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

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

D. Payment Becomes Due: Thirty days after the presentation to Owner of the final Application
   for Payment and accompanying documentation, the amount recommended by Engineer
   (less any further sum Owner is entitled to set off against Engineer’s recommendation,
including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 Waiver of Claims

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor’s failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor’s continuing obligations under the Contract Documents.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 Correction Period

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner’s written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;

2. correct such defective Work;

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner’s written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
E. Contractor’s obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

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

16.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor’s persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor’s disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor’s repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,
and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor’s services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 Owner May Terminate For Convenience

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for
expenses or damage directly attributable to Contractor’s stopping the Work as permitted by this paragraph.

**ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

17.01 **Methods and Procedures**

A. **Disputes Subject to Final Resolution**: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

B. **Final Resolution of Disputes**: For any dispute subject to resolution under this Article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
2. agree with the other party to submit the dispute to another dispute resolution process; or
3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

**ARTICLE 18 – MISCELLANEOUS**

18.01 **Giving Notice**

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 **Computation of Times**

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

18.03 **Cumulative Remedies**

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.
18.04 Limitation of Damages
   A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 No Waiver
   A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

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

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

18.08 Headings
   A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.
SECTION 00 80 00
SUPPLEMENTARY CONDITIONS

A. Caption and Introductory Statements

Supplementary Conditions

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

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

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

1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

SC-1.01

Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

Geotechnical Baseline Report (GBR) — The interpretive report prepared by or for Owner regarding subsurface conditions at the Site, and containing specific baseline geotechnical conditions that may be anticipated or relied upon for bidding and contract administration purposes, subject to the controlling provisions of the Contract, including the GBR’s own terms. The GBR is a Contract Document.

Geotechnical Data Report (GDR) — The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner in support of the Geotechnical Baseline Report. The GDR’s content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. The GDR does not include an interpretation of the data. If opinions, or interpretive or speculative non-factual comments or statements appear in a document that is labeled a GDR, such opinions, comments, or statements are not operative parts of the GDR and do not have contractual standing. Subject to that exception, the GDR is a Contract Document.

SC-1.01.A

Add the following sentence to the end of Paragraph GC-1.01.A:

“When used in a context consistent with the definition of a listed-defined term, the term shall have a meaning as defined below whether capitalized or italicized or otherwise.”
SC-1.01.A.20

Replace paragraph GC-1.01.A.20 with the following paragraph:

Engineer – The individual or entity named as such in the Agreement with respect to the design of the Project; however with respect to rights, responsibilities and authorities assigned to “Engineer” in the Contract Documents, the word Engineer shall be read as “Engineer and/or Owner’s Construction Quality Assurance Consultant.” Upon Award of Contract, Owner shall provide a clarification to the Contractor defining (if any) the division of rights, responsibilities and authorities of the Engineer and the Owner’s Construction Quality Assurance Consultant.

2 – PRELIMINARY MATTERS

SC-2.04 Preconstruction Conference; Designation of Authorized Representatives

SC-2.04.A

Modify paragraph GC-2.06A. by adding the following phrase after the word “started”:

“(except with approval of the Owner)”

3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-3.01 Intent

SC-3.01.F

Add the following new paragraphs immediately after Paragraph 3.01.E:

F. The Specifications may vary in form, format and style. Some Specifications sections are written in varying degrees of streamlined or declarative style and some sections may be relatively narrative by comparison. Omissions of such words and phrases as “the Contractor shall,” "in conformity with," "as shown," or "as specified" are intentional in streamlined sections. Omitted words and phrases shall be supplied by inference. Similar types of provisions may appear in various parts of a section or articles within a part depending on the format of the section. The Contractor shall not take advantage of any variation of form, format or style in making claims for extra Work.

G. The cross referencing of Specifications sections under the subparagraph heading "Related Sections include but are not necessarily limited to:" and elsewhere within each Specifications section is provided as an aid and convenience to the Contractor. The Contractor shall not rely on the cross referencing provided and shall be responsible to coordinate the entire Work under the Contract Documents and provide a complete Project whether or not the cross referencing is provided in each section or whether or not the cross referencing is complete.

F. The Construction Documents, and the Project to be constructed in accordance with the Construction Documents, are subject to the provisions and requirements of Iowa Code Chapter 573.
4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.03 Reference Points

SC-4.03.B

Add the following paragraph immediately after Paragraph GC-4.03.A:

B. Contractor shall engage, at Contractor’s expense, a registered professional engineer or licensed land surveyor to give Contractor lines and elevations for Contractor’s use in constructing the Work. The registered engineer or licensed land surveyor shall furnish to Engineer, through Contractor, a signed plat certifying the location and elevation of the Work indicating ties and closure to reference points established by the Owner and indicated on the Drawings.

SC-4.05.H

Add the following paragraphs immediately after paragraph GC-4.05.G:

H. No extension of the Contract Time will be allowed for additional Work or for claimed delay unless the additional Work contemplated or claimed delay is shown to be on the critical path of the Project’s schedule of construction or Contractor can show by critical path method analysis how the additional Work on claimed delay adversely affects the critical path.

I. Time extensions will not be granted for rain, wind, flood, or other natural phenomena of normal intensity for the locality where Work is performed. For purpose of determining extent of delay attributable to unusual weather phenomena, a determination shall be made by comparing the weather for a minimum continuous period of at least one-fourth of the Contract Time involved with the average of the preceding 5-year climatic range during the same time interval based on U.S. Weather Bureau statistics for the locality where the Work is performed.

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

SC-5.03 Subsurface and Physical Conditions

SC-5.03.C

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

C. Other drawings that were not included with the Bidding Documents are available for examination at the HDR office at 300 East Locust Street, Suite 100 Des Moines, IA 50309 during regular business hours. Those not furnished with the Bidding Documents are available upon request for the cost of reproduction of $0.20 per page plus express shipping.

SC-5.06.A.3

Add the following new subparagraphs immediately after Paragraph 5.06.A.2:

3 Reports and other drawings that were not included with the Bidding Documents are available for examination at the HDR office during regular business hours. Those not furnished with the Bidding Documents are available upon request for the cost of reproduction of $0.20 per page plus express shipping.
6 – BONDS AND INSURANCE

SC-6.02 Insurance—General Provisions

SC-6.02.B.1
Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker’s compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the State of Iowa within the last 12 months.

SC-6.03 Contractor’s Insurance

SC 6.03.C
Delete Paragraph 6.03.C in its entirety and replace it with the following:

C. Commercial General Liability—Forms and Content: Contractor’s commercial liability policy shall be written on a 2007 (or newer) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

SC 6.03.C.1.a
Delete Paragraph 6.03.C.1.a in its entirety and replace the same with the following:

a. Such insurance shall be maintained for 10 years after final payment.

SC 6.03.C.9
Add the following paragraph immediately after Paragraph 6.03.C.8:

9. Per Project Aggregate.

SC 6.03.I.3
Delete Paragraph 6.03.I.3 in its entirety and replace it with the following:

3. contain a provision or endorsement that the coverage afforded will not be canceled or renewal refused until at least 30 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.

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

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

1. Workers’ Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

<table>
<thead>
<tr>
<th>State:</th>
<th>Statutory</th>
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</thead>
<tbody>
<tr>
<td>Federal, if applicable (e.g., Longshoremans):</td>
<td>Statutory</td>
</tr>
<tr>
<td>Jones Act coverage, if applicable:</td>
<td></td>
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<tr>
<td>Bodily injury by accident, each accident</td>
<td>$ N/A</td>
</tr>
<tr>
<td>Bodily injury by disease, aggregate</td>
<td>$ N/A</td>
</tr>
</tbody>
</table>
Employer’s Liability:

Bodily injury, each accident $ 500,000
Bodily injury by disease, each employee $ 500,000
Bodily injury/disease aggregate $ 500,000

For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker’s compensation or commercial general liability policy with a minimum limit of: $ N/A

Foreign voluntary worker compensation Statutory

2. Contractor’s Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate $ 2,000,000
Products - Completed Operations Aggregate $ 2,000,000
Personal and Advertising Injury $ 1,000,000
Each Occurrence (Bodily Injury and Property Damage) $ 1,000,000

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Combined Single Limit of $ 1,000,000

4. Excess or Umbrella Liability:

Per Occurrence $ 5,000,000
General Aggregate $ 5,000,000

5. Contractor’s Pollution Liability:

Each Occurrence $ 1,000,000
General Aggregate $ 3,000,000

☐ If box is checked, Contractor is not required to provide Contractor’s Pollution Liability insurance under this Contract
6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: None.

7. Contractor’s Professional Liability:

   Each Claim ........................................... $1,000,000
   Annual Aggregate ................................. $1,000,000

SC-6.05 Property Insurance

SC-6.05.A.14
Add the following to the list of requirements in Paragraph 6.05.A, as a numbered item:

14. be subject to a deductible amount of no more than $25,000 for direct physical loss in any one occurrence.

SC-6.05.A.1.a
Add the following new subparagraph after subparagraph 6.05.A.1:

a. In addition to Owner, Contractor, and all Subcontractors, include as insureds the names of Engineer, Owner’s Construction Quality Assurance Consultant and each of their respective subconsultants, who will be identified upon Award of Contract, as their interests may appear, including their respective officers, directors, agents, and employees.

SC-6.05.A.15
Add the following to the list of items in Paragraph 6.05.A, as numbered items:

15. include for the benefit of Owner loss of profits and soft cost coverage including, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, plus attorneys’ fees and engineering or other consultants’ fees, if not otherwise covered;

16. include by express endorsement coverage of damage to Contractor’s equipment.

7 – CONTRACTOR’S RESPONSIBILITIES

SC-7.01 Supervision and Superintendence

SC-7.01.B
Add the following sentence to the end of Paragraph 7.01.B:

“The Contractor shall identify its representative at the Site that shall have authority to act on behalf of Contractor. All communications given to or received from this representative shall be binding on Contractor.”
SC-7.01.C

Add the following new paragraph immediately after Paragraph 7.01.B:

C. Any superintendent or other personnel, who repeatedly fails to follow the Engineer’s written or oral orders, directions, instructions, or determinations, shall be subject to removal from the project. Upon the written request of the Owner, the Contractor shall immediately remove such superintendent or other personnel and name a replacement in writing. Noncompliance with the Owner’s request to remove and replace personnel at any level shall be grounds for terminating the Contract.

SC-7.02 Labor; Working Hours

SC-7.02.B

Delete Paragraph 7.02 B. in its entirety, and insert the following:

B. In the absence of any Laws or Regulations to the contrary or other stipulations in the Contract Documents, Contractor may perform the Work on holidays, during any or all hours of the day, and on any or all days of the week, at Contractor's sole discretion.

SC-7.02.C

Add the following new paragraph immediately after Paragraph 7.02.B:

C. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer’s services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day.

SC-7.02.C.1

Add the following new subparagraph immediately after Paragraph 7.02.C:

1. For purposes of administering the foregoing requirement, additional overtime costs are defined as exceeding 60 hours of active Work during any given week of construction. The hourly cost of the Resident Project Representative is $110 per hour.

SC-7.03 Services, Materials, and Equipment

SC-7.03.A

Add the following new sentence at the end of paragraph GC-7.03.A:

“All items of standard equipment shall be the latest model at the time of delivery, unless otherwise specified.”

SC-7.03.B

Add the following new subparagraphs immediately after Paragraph 7.03.B:

1. Where the Work requires equipment be furnished, due to the lack of standardization of equipment as produced by the various manufacturers, it may become necessary to make minor modifications in the structures, buildings, piping, mechanical work, electrical work, accessories, controls, or other work, to accommodate the particular equipment offered. Contractor's bid price for any equipment offered shall include the cost of making any necessary changes subject to the approval of Engineer.
SC-7.08  Permits

SC-7.08.B
Add a new paragraph immediately after Paragraph 7.08A:

B. In those instances where a certificate of occupancy must be obtained before the Work under this Contract can be occupied and placed into service by Owner, it shall be the responsibility of Contractor to arrange, coordinate, and pay any costs of obtaining said certificate.

SC-7.09  Taxes

SC-7.09.B
Add a new paragraph immediately after Paragraph 7.09.A:

B. Owner is exempt from payment of sales and compensating use taxes of the State of Iowa and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner’s exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

SC-7.11  Record Documents

SC-7.11.B
Add the following new paragraphs at the end of paragraph 7.11.A:

B. Contractor’s licensed land surveyor or registered engineer shall confirm all control points identified on the Contract Documents for record document purposes and for purposes of measurement and payment for unit price items. Contractor’s record documents shall include certification, by the Contractor’s licensed land surveyor or registered engineer, of the final as-constructed geometry of the Project.

1. Owner, at Owner’s discretion, may employ the services of a quality assurance surveyor to check the accuracy of Contractor’s survey.

2. In the event there is any discrepancy between Contractor’s surveys and Owner’s quality assurance surveys, a third independent reconciling survey by a licensed land surveyor, mutually acceptable to both of the Contractor and Owner shall be performed to reconcile the discrepancy. The cost of such additional survey shall be borne by the party whose initial survey is at greater deviation from the reconciling survey.

C. Contractor shall update the on site record drawings on a weekly basis, or more frequently.

SC-7.12  Safety and Protection

SC-7.12.C  Insert the following after the first sentence of Paragraph 7.12.C:

“The following Owner safety programs are applicable to the Site:

1. Metro Waste Authority Safety and Health Rules for Outside Contractors;
2. Metro Waste Authority Contractor Orientation Written Program; and
3. Metro Waste Authority Contractor Safety Declaration.”
SC-7.16   Shop Drawings, Samples and Other Submittals

SC-7.16.A.3

Add the following new sentence and paragraph at the end of paragraph 7.16.A.3:

“...otherwise, Contractor will not be relieved of the responsibility of executing the Work in accordance with the Contract Documents, even though such Shop Drawings or Samples have been otherwise reviewed.

a. If a Shop Drawing or Sample, as submitted, indicates a variation from the Contract requirements as set forth in the Contract Documents and Engineer finds same to be in the interest of Owner and to be so minor as not to involve a change in the Contract Price or time for performance, Engineer may approve the Shop Drawings or Samples; provided however, such departure is slight in nature and does not affect the design concept of the Work.”

Add the following paragraphs at the end of paragraph GC-7.16.A.3:

4. Contractor shall submit all Shop Drawings and Samples sufficiently in advance of construction requirements to allow ample time for checking, correcting, resubmitting and rechecking and to avoid any delay in progress of the Work.

5. Shop Drawings and Sample submittals not conforming to requirements of the Contract Documents will be returned to Contractor without action for resubmittal and the resulting delay shall be entirely the responsibility of Contractor.

SC-7.16.D.1

Modify the first sentence of GC-7.16.D.1 by deleting the following word after the word “provide”:

“timely”

SC-7.16.E.4

Add the following paragraph immediately after paragraph GC-6.17.E.3:

4. Engineer’s check and review of Shop Drawings and Samples, standard specifications and descriptive literature submitted by Contractor will be only for general conformance with design concept, except as otherwise provided, and shall not be construed as:

a. permitting any departure from the Contract requirements;

b. relieving Contractor of the responsibility for any error in details, dimensions or otherwise that may exist in such submittals;

c. constituting a blanket approval of dimensions, quantities, or details of the material or equipment shown; or

d. approving departures from additional details or instructions previously furnished by Engineer. Such check or review shall not relieve Contractor of the full responsibility of meeting all of the requirements of the Contract Documents.
SC-7.18  Indemnification

SC 7.18.A
Amend Paragraph 7.18.A by deleting the following:
"negligent".

9 – OWNER’S RESPONSIBILITIES

SC-9.07  Change Orders

SC-9.07.A
Modify Paragraph GC-9.07A. by adding the following sentence at the end of the first sentence:
Contractor shall, at Contractor’s own expense, provide help and other assistance as may be required for making measurements of Unit Price Work.

10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03  Project Representative

SC-10.03
Add the following paragraphs immediately after Paragraph 10.03.A:

B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.

1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.

2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.

3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare documentation of such meetings as requested by Engineer.

4. Liaison:
   a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
   b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.
   c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed.

6. Shop Drawings and Samples:
   a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.

c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.

7. Review of Work and Rejection of Defective Work:
   a. Conduct on-Site observations of Contractor’s work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
   b. Report to Engineer whenever RPR believes that any part of Contractor’s work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

8. Inspections, Tests, and System Start-ups:
   a. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

9. Records:

10. Reports:
   a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor’s compliance with the Progress Schedule.

11. Payment Requests: Assist the Engineer in the review of applications for payment with Contractor for the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

12. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

13. Completion:
   a. Participate in Engineer’s visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
   b. Participate in Engineer’s final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and in preparation of a final punch list of items to be completed and deficiencies to be remedied.
   c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including “or-equal” items).
2. Exceed limitations of Engineer’s authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or any failure of the Contractor to comply with Laws and Regulations applicable to the Contractor’s performance of the work.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

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

SC-13.03 Unit Price Work

SC-13.03.B

Add the following sentence immediately at the end of Paragraph 13.03.B:

“Progress estimates serve only as basis for partial payments. The Engineer may revise progress estimates and/or quantities any time before final acceptance. If the Engineer deems it proper to do so, changes may be made in progress estimates and in the final estimate.”

SC-13.03.C.

Add the following sentence immediately at the end of Paragraph 13.03.C:

“Work described in the Contract Documents, or reasonably inferred as required for a functionally complete installation, but not identified in the listing of unit price items, shall be considered incidental to unit price work listed and the cost of incidental work included as a part of the unit price.”

SC 13.03.E

Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. if the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 20 percent from the estimated quantity of such item indicated in the Agreement; and

2. if there is no corresponding adjustment with respect to any other item of Work; and
3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

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

SC-15.01 Progress Payments

SC-15.01.B.1
Delete the first sentence of Paragraph 15.01.B.1 in its entirety and insert the following in its place:

1. By the 10th day of each 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.

SC-15.03 Substantial Completion

SC 15.03.B.1
Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-15.06 Final Payment

SC-15.06.D.
Delete Paragraph 15.06.D in its entirety and insert the following in its place:

D. Payment Becomes Due: The Engineer shall present to Owner the final Application for Payment and accompanying documentation. Subject to the provisions of Iowa Code Chapter 573 and as hereinafter provided in this Paragraph 15.06.D, 30 days after the last to occur of (i) the completion of the Work and (ii) final acceptance of the Work by Owner, the amount recommended by Engineer in the final Application for Payment (less any further sum Owner is entitled to set off against Engineer’s recommendation, including but not limited to set-offs for liquidated damages, set-offs allowed under the provisions above with respect to progress payments, set-offs for claims on file with Owner for material and/or labor in accordance with Iowa Code Chapter 573, as more specifically addressed in Paragraph 15.06.D.1 below) will become due and shall be paid by Owner to Contractor.
1. **Claims for Materials and/or Labor.** In accordance with Iowa Code Chapter 573, if at the end of the above-referenced 30-day period claims are on file with the Owner for materials and/or labor, Owner shall continue to retain from the unpaid funds a sum equal to double the total amount of all claims on file. The remaining balance of the unpaid funds shall be released and paid to Contractor.

2. **Interest.**
   a. In accordance with Iowa Code Chapter 573 and subject to the provisions therein, failure to make payment of any amount due to Contractor within 50 days after the last to occur of (i) the completion of the Work and (ii) final acceptance of the Work by Owner, shall cause interest to accrue on the amount unpaid to the benefit of the unpaid party.
   b. Interest shall accrue during the period commencing the 31st day following the last to occur of (i) the completion of the Work and (ii) final acceptance of the Work by Owner, and ending on the date of payment.
   c. The rate of interest shall be determined by the period of time during which interest accrues, and shall be the same as the rate of interest that is in effect under Iowa Code Section 12C.6, as of the day interest begins to accrue, for a deposit of public funds for a comparable period of time. Except as provided in Iowa Code Sections 573.12 and 573.16, interest shall not accrue on funds retained by Owner to satisfy claims for material and/or labor on file with Owner.

3. **Exception.** In accordance with Iowa Code Chapter 573, no part of the unpaid fund due to Contractor shall be retained, as provided in Iowa Code Chapter 573, on claims for materials furnished, other than materials ordered by the Contractor or Contractor’s authorized agent, unless such claims are supported by a certified statement that the Contractor had been notified within 30 days after the materials were furnished or by itemized invoices rendered to Contractor during the progress of the Work, of the amount, kind and value of the material furnished.

**SC-15.07 Waiver of Claims**

**SC-15.07.B.**
Delete Paragraph 15.07.B in its entirety and insert the following in its place:

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner and Engineer other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

**16 – SUSPENSION OF WORK AND TERMINATION**

**SC-16.02 Owner May Terminate for Cause**

**SC-16.02.H.**
Add the following paragraphs immediately after paragraph 16.02.G:

H. Neither Owner, Engineer, nor any of their respective consultants, agents, officers, directors or employees shall be in any way liable or accountable to Contractor or Surety for the method by which the completion of the Work, or any portion thereof, may be accomplished or for the price paid therefore.

I. Maintenance of the Work shall continue to be Contractor’s and Surety’s responsibilities as provided for in the bond requirements of the Contract Documents or any special guarantees provided for under the Contract Documents or any other obligations otherwise prescribed by law.
17 – FINAL RESOLUTION OF DISPUTES

SC-17.02 Arbitration

SC-17.02

Add the following new paragraph immediately after Paragraph 17.01.

17.02 Arbitration

A. All disputes arising under this Article shall be resolved through arbitration. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. Each party to the Contract Documents may initiate arbitration by serving a written notice upon the adverse party(s) stating as simply as possible the points of difference between the parties and stating an intent to initiate arbitration procedures. A copy of such written notice shall be sent to the Engineer at the same time. The written notice shall be deemed initiation of arbitration procedures. The demand for arbitration will be made within the specific time required in this Article, or if no specified time is applicable within a reasonable time after the matter in question has arisen. In no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. Within ten (10) days thereafter, the parties shall meet and select an arbitrator. If the parties cannot agree on an arbitrator, Contractor shall have the right to select an arbitrator from a list of five (5) arbitrators submitted by Owner. Each of the five arbitrators submitted shall be a retired Iowa district court judge or Iowa appellate court justice. The arbitration hearing shall be held within thirty (30) days of the selection of the arbitrator. The hearing shall be conducted informally.

D. No arbitration arising out of or relating to the Contract shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer’s consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:

1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.

E. The decision shall be reduced to writing and submitted in writing and the determination so made shall be binding upon the parties and shall form the basis for future guidance of all parties on the issues so resolved. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties and include a concise breakdown of the award, and a written explanation of the award specifically citing the Contract provisions deemed applicable and relied on in making the award.

F. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

G. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor. Each party shall pay for its own witness costs.

H. The arbitration shall be conducted under the Iowa Rules of Civil Procedure.
SC-17.03  Attorneys’ Fees

SC-17.03

Add the following new paragraph immediately after Paragraph 17.02:

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

END OF SECTION
DIVISION 01

GENERAL REQUIREMENTS
SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. References.
   2. Specification Formats and Conventions.
   3. Work Covered by the Contract Documents.
   4. Coordination with Existing Operations.
   5. Work Sequence.
   6. Use of Premises.
   7. Work by Others.
   8. Future Work.
   9. Owner-Furnished Products.
   11. Project Utility Sources.

B. Project Identification:
   1. Project Location:
      a. Metro Central Transfer Station, 4198 Delaware Avenue, Des Moines, Iowa 50313.
   2. Owner: Metro Waste Authority.
   3. Work will be performed under the following Prime Contracts: Contract P-53 – MCTS Tipping Floor Replacement.

1.2 REFERENCES

A. Definitions:
   1. Basic Contract definitions and terminology are included in the General Conditions and Supplementary Conditions of the Contract.
   2. The term "approved," when used to convey Engineer’s action on Contractor's submittals, applications, and requests, is limited to Engineer’s duties and responsibilities as stated in the General Conditions of the Contract.
   3. The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

B. Industry Standards:
   1. Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
   2. Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
   3. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
   4. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.
5. Each Section of the Specifications generally includes a list of reference standards normally referred to in that respective Section. The purpose of this list is to furnish the Contractor with a list of standards normally used for outlining the quality control desired on the project. The lists are not intended to be complete or all inclusive, but only a general reference of standards that are regularly referred to.

6. Each entity engaged in construction on the Project shall be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.

1.3 SPECIFICATION FORMATS AND CONVENTIONS

A. The Specifications are organized into Divisions and Sections using the 48 Division Format and CSI's "MasterFormat" numbering system.

B. The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

1.4 WORK COVERED BY THE CONTRACT DOCUMENTS

A. Project Identification: P-53 – MCTS Tipping Floor Replacement.

B. The Work to be Performed Will Consist of:

1. For Metro Central Transfer Station (MCTS):
   a. Facility tipping floor repair throughout the entire facility with high strength concrete topping.
   b. Remove and replace existing trench drain.
   c. Extend push wall.
   d. Repair hopper skirt including metal sheathing and concrete repairs.
   e. Flush drain lines from trench drain and clean out grease and grit trap after concrete replacement.
   f. Site preparation.
   g. Site demolition including utilities for stormwater repairs, semi-trailer turnout lane, and fuel tank.
   h. General earthwork including site grading, soil excavation and processing, trenching, backfilling, embankment, and compacting.
   i. Excavation and placement of structural fill to reach base grades.
   j. Curb cut for semi-trailer turnout lane.
   k. Pour semi-trailer turnout lane. Modify and relocate chain link fence, bollards, and traffic signs.
   l. Storm drainage including storm piping, permanent TRM placement, with associated appurtenances.
   m. Erosion controls and storm water pollution prevention.
   n. Utility construction including process water drain line connected to the repaired trench drain lines.
   o. Miscellaneous structures and appurtenances.
   p. Contractor’s Health and Safety Plan development and implementation.
   q. Traffic and access controls.
   r. Underground conduits and feeders.
   s. Fueling system and convenience power and controls.
   t. Panelboards and transformers.
   u. Conduit and Wire.
   v. Grounding.
   w. New fuel island with equipment and foundations.
x. Provide fuel island equipment:
   1) Demolish / remove existing fueling equipment.
   2) Patch holes and siding.
   3) Install new diesel fuel tank with appurtenances including vents, gauges, sensors,
      and fill lines.
   4) Install new dispensing equipment including suction pumps, dispensers, and
      discharge lines with valves and accessories.
   5) Relocate and install Fuel Master System.
   6) Install new emergency fuel shut-off station, as needed.
   7) Install leak detection and overfill monitoring system.

y. Final grading, seeding, and site work.

z. Closeout documentation.

aa. Others: See Drawings and Specifications.

1.5 COORDINATION WITH EXISTING OPERATIONS

A. Site Access after completion of the interior Work and MCTS has returned to service:
   1. Existing site access roads shown on the Drawings shall not be obstructed by Contractor or
      Work.
   2. Where roadway crossings are indicated, plan and sequence work to provide Owner
      uninterrupted use of the existing roadways.
   3. Where designated access roads to specific construction areas are not shown on the
      Drawings, Contractor shall coordinate planned access routes with Owner and Engineer at
      the pre-construction conference.
   4. Mark, rope off, barricade or otherwise protect all work in progress.

B. Drainage:
   1. Where earthwork disturbs existing drainage patterns, plan work to ensure continuous proper
      drainage.

C. Vegetation:
   1. Do not disturb vegetation outside the designated limits of construction.
   2. Restore all disturbed vegetation to pre-construction conditions.

D. Existing Transfer Station:
   1. Existing Transfer Station and surrounding areas (including parking and vehicle
      maneuvering areas) are to be maintained accessible for operations, except for scheduled and
      pre-approved periods and areas of interruption.
   2. Continuous availability of diesel fuel filling station for Owner use is required during Phase
      1 and upon substantial completion of Phase 2 of the interior Work in the MCTS. Contractor
      may choose to stage relocation and hookup of existing diesel tanks to maintain one
      continuous fueling point, or may elect to provide a safe and unobstructed temporary diesel
      fueling station at a location coordinated with and approved by Owner, and in compliance
      with all applicable regulations.

1.6 WORK SEQUENCE

A. Work Plan:
   1. Contractor shall submit a Work Plan including project schedules, sequencing and other
      conditions and procedures to the Owner and Engineer and obtain such approvals a minimum
      of 2 weeks prior to beginning to undertake the Work.

B. Work will require sequencing priorities to include, but not necessarily limited to:
   1. Phase 1 when MCTS will remain in service with Work within the station will be allowed on
      the east half of the tipping floor and trench drain as shown on the Drawings. Phase 1 is
      between October 9, 2017 and October 30, 2017
2. Phase 2 when MCTS will be closed allowing Work on the full tipping floor replacement, trench drain removal and replacement, push wall extension, and hopper skirt repair all must be substantially complete including curing of concrete within this time period. Phase 2 begins on October 30, 2017 and ends on November 28, 2017 and MCTS will return to service after the interior Work is complete.

3. Work external to MCTS waste receiving and tipping floor including all Work associated with the removal and replacement of the fueling island, installation of the semi-trailer turnout lane, and storm water drainage replacement may be completed before during or after the Work completed within MCTS, however all Work may start on October 9, 2017 and must be substantially complete by December 7. Fuel must be available at all times for MCTS operations during Phase 1 and upon substantial completion of Phase 2. Installation of grassing and erosion stabilization materials shall be established based on specified timeframes for seeding.

C. Roadways:
1. Owner’s perimeter access road around the MCTS shall remain open as an unobstructed road during Phase 1 and after the completion of Phase 2 of the MCTS interior Work when the transfer station is in operation.
   a. During the days when MCTS will be closed for waste receipts, work may be conducted without restriction but the Owner may still need access on site external to the building.
2. Where Work has the potential to restrict or obstruct roadways during active site hours.
   a. Submit traffic control plan.
      1) The plan shall show how the disruption to the road will be minimized, and how the duration of the disruption will be minimized.
      2) Obtain Owner and Engineer approval of the plan prior to this work.
   b. Provide services of flagman and barricades at all one-lane access roadway locations, or as necessary during Owner's ongoing operating hours, designed as open for public use below.
      1) Flagman, signage and appropriate barricades will be a necessary part of any impacts or temporary obstructions of Main Access Roads during the hours stipulated above.

1.7 USE OF PREMISES

A. Contractor shall have use of the Owner’s premises within the designated limits of construction for construction operations, including use of the Project Site, as allowed by law, ordinances, permits, easement agreements and the Contract Documents, except as noted herein.
1. Note limitations and restrictions associated with MCTS include limited time to complete Work inside the building when normal waste receipt will not occur.

B. Contractor's use of premises is limited by Owner's ongoing operations, right to perform work or to retain other contractors on portions of the Project.

C. Hours of Site Access during normal operation (outside the period when MCTS will be shut down for the interior Work):
1. The Site is open for public use as follows.
   a. Monday-Friday: 6:30 A.M. – 4:30 P.M.
   b. Saturday: Closed.
   c. Sunday: Closed.
2. The Site is closed on the following holidays:
   a. New Year's Day.
   b. Memorial Day.
   c. Independence Day.
   d. Labor Day.
   e. Thanksgiving Day.
   f. Christmas Day.
3. The Site will be closed to waste receipt between October 30, 2017 and November 28, 2017 during which time all Work interior to the MCTS building must be substantially complete including concrete curing to required strength at the end of Phase 2.

4. Contractor and all subcontractors and suppliers shall enter and exit through the main facility gate and stop at scale office to notify attendant upon entering.

5. If access is required beyond the public use hours, Contractor must inform the Owner’s designated representative of the required hours of access and must make arrangements with the Owner to obtain such access. Contractor shall obtain prior written permission from the Owner for performing construction activities between the hours of 9:00 P.M. and 5:00 A.M. Monday – Saturday, Sunday operations, and holiday operations. Permission for site access beyond the public use hours will be at the Owner’s option.

6. If Contractor is present on-site during non-public use hours, the site must be continually maintained secure from unauthorized access.

7. Contractor shall maintain a daily employee roster for all employees on-site and the daily roster shall be posted at the field office.

D. The Project Site is limited to boundaries indicated in the Contract Documents.

E. Provide protection and safekeeping of material and products stored on or off the premises.

F. Move any stored material or products that interfere with operations of Owner or other Contractors.

1.8 WORK BY OTHERS

A. Cooperate fully with separate contractors and/or the Owner so work by others may be carried out smoothly, without interfering with or delaying work under this Contract.

1. Owner will endeavor to dictate construction sequences that minimize impacts to Work under this Contract.

2. Cooperate with other contractors or consultants, hired by the Owner, to allow access to areas required for their performance of work.

a. Communicate with others performing work to avoid conflicts and identify areas of access.

b. If conflicts are anticipated or identified immediately bring these to the attention of the Owner and Engineer’s Resident Project Representative.

1.9 PROJECT UTILITY SOURCES


B. Communications: CenturyLink, Windstream/McLeod, MCI.

C. Water: Des Moines Water Works.

1.10 PARTIAL OWNER OCCUPANCY

A. Owner will occupy or allow others to occupy certain areas for purpose of ongoing operation:

1. Roadways, parking, and maneuvering areas.

2. Outside October 30, 2017 through November 28, 2017, Owner will conduct normal business.

1.11 MISCELLANEOUS PROVISIONS

A. Contractor shall be responsible for negotiations of any waivers or alternate arrangements required to enable transportation of materials to the site.

B. Maintain conditions of existing access roads on the site such that access is not hindered as the result of construction related activities or deterioration.

C. Contractor shall remove all wind or weather related litter (solid waste) that enters the project area at no additional cost to the Owner and shall ensure such materials are not incorporated into the Work.
1 PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

2 PART 3 - EXECUTION - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

3 END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Project phasing requirements
   2. Job conditions.
   3. Site specific health and safety plan.
   4. Attachment A.
      a. Contractor’s Safety Rules.
      b. Contractor Orientation.
      c. Contractor Safety Declaration.
   5. Testing and Special Inspections.

1.2 SUBMITTALS

A. Miscellaneous Submittals:
   1. Project schedule.
   2. Site specific health and safety plan (HASP).
   3. Testing report.

1.3 ORDER OF CONSTRUCTION AND CONSTRUCTION SCHEDULE

A. Construction operations will be scheduled to allow the Owner uninterrupted operation prior to
   and immediately following the allowed interior construction period. All Work on the interior of
   the transfer station including concrete curing must be substantially completed between October
   9, 2017 and November 28, 2017 with Phase 1 completed between October 9, 2017 and October
   30, 2017 and Phase 2 completed between October 30, 2017 and November 28, 2017. All Work
   completed outside of the building may be completed starting October 9, 2017 but must be
   substantially complete by December 7, 2017.
   1. Coordinate connections with existing work to ensure timely completion of interfaced items.

B. Contractor shall provide suitable soil to be used for the controlled fill, backfill, drainage
   roadways, and similar uses meeting SUDAS requirements. At no time shall Contractor or his
   employees modify operation of the existing facilities or start construction modifications without
   approval of the Owner except in emergency to prevent or minimize damage.

C. Within 15 days after award of Contract, submit for approval a Gantt Bar chart baseline schedule.
   1. Account for schedule of Subcontractors and Suppliers.
   2. Include proper phasing and sequence of construction, various crafts, purchasing time, Shop
      Drawing approval, material delivery, equipment fabrication, start-up, demonstration,
      forming, cure time, and similar time consuming factors.
      a. Application software: Microsoft Project, or equal.
   3. Show the order and interdependence of activities.
      a. The start of an activity shall be dependent on the completion of a preceding
         activity(ies), with Notice to Proceed being the initial activity.
      b. Divide activities if necessary such that the maximum duration of any list activity is 10
         days other than concrete curing.

D. Evaluate schedule no less than every two weeks and as required elsewhere in Contract
   Documents:
   1. Update, correct and submit to Engineer with pay application to show rescheduling necessary
      to reflect true job conditions.
2. When shortening of various time intervals is necessary to correct for behind schedule conditions, indicate actions to implement to accomplish work in shorter duration.
3. Information shall be submitted to Engineer in writing with revised schedule.

E. If Contractor does not take necessary action to accomplish work according to schedule, Contractor may be ordered by Owner in writing to take necessary and timely action to improve work progress.
   1. Owner may require increased work forces, extra equipment, extra shifts or other action as necessary.
   2. Should Contractor refuse or neglect to take such action authorized, under provisions of this contract, Owner may take necessary actions including, but not necessarily limited to, withholding of payment and termination of Contract.

F. Provide two-week look-ahead schedules every week and at each construction progress meeting or pre-installation conference.

1.4 PROJECT/SITE CONDITIONS

   A. The project site is an active solid waste disposal areas regulated by the State of Iowa.
   
   B. Health and Safety Plan (HASP):
      1. Contractor shall employ the services of a Certified Safety Professional or Certified Industrial Hygienist to:
         a. Evaluate the potential site conditions.
         b. Develop a site specific HASP following the requirements of 29-CFR 1910.120, 29-CFR 1910.146, and the documents in Attachment A as required.
            1) Such plan shall include appropriate measures for confined space entry and fall protection as project conditions warrant.
         c. The Contractor’s HASP shall be kept on file at the Contractor’s field office and made available to the Owner prior to start of construction.
         d. The Contractor’s HASP shall include, at a minimum, the following information:
            1) Project organization chart showing Contractor’s Site Safety Officer.
            2) Summary of the health monitoring program.
            3) Summary of the respiratory protection and site monitoring program.
            4) Summary of protective clothing required.
            5) Summary of decontamination procedures.
            6) List of employees that have completed health and safety training and certificates received.
            7) Description of personnel and visitor access and egress controls.
         e. The Contractor shall be solely responsible for methods and precautions taken while performing work on the project sites to insure the health and safety of their personnel and of other persons and operations resulting from work on this project.
         f. A Certified Safety Professional shall be certified by the Board of Certified Safety Professionals (BCSPs).
   
   2. Contractor shall complete all work involving any confined excavations (such as trenches) and fall protection measures in conformance with the health and safety requirements stipulated in the Contract Documents and as applicable to the specific situations.
   
   3. Personal Protective Equipment:
      a. Determination of the appropriate level of personal protective equipment and procedures shall be made as a result of initial site survey, review of existing data, and a continued safety and health monitoring program performed by the Contractor’s site Safety Representative for the project.
      b. All Owner guidelines, rules and requirements shall be followed; see Attachment A.

   C. Special Considerations:
      1. Smoking shall not be permitted within the Construction Limit lines or along the Project Site Access Road(s).
         a. Owner provides designated smoking areas on the Metro Central Transfer Station Site.
            1) Signs identify these locations.
2) No other areas of the transfer station site are designated as smoking areas.

2. Possible presence of harmful or dangerous substances:
   a. Construction of this Project will require special precautions because of the conditions
      that exist in a landfill environment. These conditions include but are not limited to:
      Fall hazards, contact with residual waste present in the facility, and fuel storage.
      During operation mobile equipment will also be active on site.

D. Testing and Special Inspections:
   1. Definitions:
      a. Owner’s Testing and Inspection Service Provider: Approved Agency or Owner Quality
         Assurance Consultant hired by the Owner to perform testing and special inspections
         defined in the Contract Documents to be performed by the Owner.
      b. Contractor’s Testing Agency: Agency hired by the Contractor to perform
         prequalification and field-testing which are defined in the Contract Documents to be
         provided by the Contractor.
      c. Special Inspections: Inspections required by the International Building Code (IBC) to
         verify Contract Document compliance of materials, installation, fabrication, erection or
         placement of components and mechanical connections.
   2. General:
      a. Testing and Special Inspection Services are required for portions of this project.
      b. The following paragraphs define the division of responsibilities between the Owner’s
         Testing and Inspection Service Provider and Contractor as related to these services.
      c. Because the nature of these services is broad, these services may be provided by more
         than one service provider for the Owner or more than one Testing Agency for the
         Contractor.
      d. Contractor’s Testing Agency is not authorized to revoke, alter, relax, enlarge or release
         any requirements of the Contract Documents nor to reject, approve or accept any
         portion of the Work.
         1) Owner retains the responsibility for ultimate rejection or approval of any portion of
            the work.
   3. Responsibilities:
      a. Contractor’s responsibilities:
         1) Notify Engineer a minimum of 24 HRS in advance of any required special
            inspector or testing services.
         2) In the case of documenting approved fabricators, Contractor shall provide all
            documentation required by the Owner or Engineer to document approved
            fabricators prior to any of those fabricator’s work arriving on site.
         3) Provide timely and safe access to construction to allow services to be provided.
      b. Owner’s Quality Assurance Consultant or Testing and Inspection Service Provider
         responsibilities:
         1) Respond in a timely manner for testing and inspection services after request has
            been made by Contractor.
         2) Provide results of services within 24 HRS of those results being made available.
         3) Inform the Engineer regarding acceptability of or deficiency in the work as soon as
            acceptability is determined.
         4) Provide documentation of all services provided.
      c. Contractor’s Testing Agency responsibilities:
         1) See individual Specification Sections.
4. Description of Types of Testing Required:
   a. Product Production Testing:
      1) This testing category addresses all factory and fabrication plant testing required to certify that materials meet Contract Document requirements.
      2) Examples of this category of testing include steel mill tests, establishment of concrete mix designs, etc.
      3) Documentation requirements may include definition of factory test procedures, testing reports, certificates or other forms as applicable.
      4) Costs associated with all phases of securing satisfactory product production testing information required by the Contract Documents are the full responsibility of the Contractor.
   b. Field Testing:
      1) Strength/condition of materials testing:
         a) This testing category addresses all testing required to verify strength of materials or conditions of subgrade during construction.
         b) Examples of this subcategory of testing include concrete testing, soils compaction testing, structural steel and weld testing.
         c) See Specification on Owner and Contractor's responsibility to provide this testing.
      2) Non-strength related testing:
         a) This subcategory addresses non-strength related testing such as piping pressure testing, di-electric testing, HVAC testing and balancing, etc.
         b) Documentation requirements may include definition of test procedures, testing reports, certificates or other forms as applicable.
         c) Costs associated with all phases of securing required satisfactory test information required by the Contract Documents are the full responsibility of the Contractor.
   5. Special Inspections:
      a. Owner will hire testing for Special Inspections as required by IBC.
      b. If work is not ready for inspection, fails to pass inspection or the inspector is impeded from making required inspection by Contractor on site conditions, the Contractor shall be assessed any added costs incurred by Owner, as a result of these conditions.
   6. Payment:
      a. If inspection/testing determines work is deficient, Contractor reimburses Owner for all associated inspection/testing.

PART 2 - PRODUCTS (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

END OF SECTION
Contractor’s Safety Rules

Metro Park East Landfill
Metro Park West Landfill
Metro Compost Center
Metro Transfer Station
Regional Collection center
Administrative Office

Revised 3/15/12
Contractor Safety Rules

Metro Waste Authority
Safety and Health Rules for
Outside Contractors

All federal, state, and local safety and health regulations and all Metro Waste Authority safety and health rules must be observed by the employees of outside contractors. Contractor supervisors shall ensure that all of their employees are aware of and comply with the rules and regulations.

Contractors will abide by all posted speed limits, safety rules, and regulations.

VIOLATORS WILL NOT BE PERMITTED TO WORK AT METRO WASTE AUTHORITY FACILITIES.

I. SMOKING
No smoking is permitted in buildings, or on the premises of any MWA facility except in the designated smoking areas. These areas are posted on site. There is no smoking anywhere on Regional Collection Center grounds.

II. SAFETY PERMITS
Safety permits must be obtained for the following operations BEFORE work begins:

A: Lockout/Tag-out Procedures required for work on any equipment that could cause injuries if started accidentally.

B: Confined Space Entry Permit:
If confined space entry is anticipated, submittal of the contractor’s and/or subcontractors confined space entry program will be required before any work is initiated. The confined space program will detail how confined spaces are determined, tested, and entered.

C: Hot Work Permit:
Required for all open flame or spark producing activities on site.

D: Other Permits:
May be required for special procedures or unusual work conditions. Your MWA contact person will coordinate permit requests for the specific area where the work is being performed.

III. HOUSEKEEPING
Work areas must be cleaned and all debris disposed of at least daily. Equipment and supplies must be stored neatly. Aisles, passageways, roadways, fire and other emergency equipment access must be kept clear at all times.

IV. SAFETY SUPPLIES AND PERSONAL PROTECTIVE EQUIPMENT
Approved hard hats are required at the working face and where directed. Other PPE may be required depending on the task and activities being performed.

Class II safety vests or clothing are required to be worn when performing activities on or near the working face or when working on or near roadways in and around the site.

Contractors are required to provide their employees with high visibility items when employees are working in the areas outlined above.

Metro Waste Authority does not provide other safety supplies such as gloves, face shields, goggles, fire extinguishers, and protective clothing for outside contractors. Equipment such as ladders, welding equipment, scaffolds, machinery, tools, forklifts, vehicles, etc. are not loaned to outside contractors without prior authorization from management.

Respiratory protection may be required to be worn by employees. If required, contractors must supply their employees with adequate respiratory protection and train them in the proper use of respirators. Metro Waste Authority may request documentation of training including the names of all employees trained and the manufacturer and model of respiratory equipment for which the have been trained to use.

V. EMERGENCY CONDITIONS
In an emergency, contractor employees will follow instructions given by any managerial employee of Metro Waste Authority. In the event of an evacuation or other on site emergency, contractors are asked to meet at the meeting point designated in the ERRAP.
VI. OTHER GENERAL SAFETY RULES

A. Compressed gas cylinders must be transported, stored, and used in an upright position. All cylinders shall be secured by a chain, or equivalent, with protective caps installed during transit and storage. Cylinder valves shall be closed as soon as work is completed. Oxygen cylinders shall be stored a minimum of 20 feet from fuel gas (acetylene, hydrogen, etc.) cylinders when not on the welding cart.

B. When overhead work is necessary, precautions must be taken to prevent fall of persons and materials. The area underneath the work operation shall be roped off and labeled with appropriate warning signs.

C. Flammable liquids shall be stored in and dispensed from approved containers.

D. Ladders must be in good condition and must be made secure near the top.

Scaffolding shall be of substantial construction with guardrails and toe boards installed.

E. Posted traffic control signs must be obeyed at all times and vehicles must be kept in safe operation condition.

F. Posted safety signs must be obeyed and observed at all times.

G. Do not shut off or make connections to electric, gas, air, water, or process lines without the prior authorization of Metro Waste Authority managerial personnel.

H. Safety barricades must be put in place at open man holes, floor holes, catch basins, and excavations. Appropriate lights must be installed if holes are to be left open after daylight hours.

I. Firearms and weapons are not permitted on Metro Waste Authority property for any reason nor are alcoholic beverages or drugs. Violation of these rules will be grounds for immediate expulsion from the facility.

J. MSDS Sheet must be provided to Metro Waste Authority personnel before any product is used at the facility.
Contractor Orientation

Metro Park East Landfill
Metro Park West Landfill
Metro Compost Center
Metro Transfer Station
Regional Collection center
Administrative Office

Revised 3/15/12
Metro Waste Authority Contractor Orientation Written Program

Metro Waste Authority policy mandates the requirement to provide an orientation to all project contractors. OSHA’s Right to Know and Lock-out/Tag-out must also be reviewed as appropriate. The following is a written program developed by Metro Waste Authority which details the provisions of the orientation requirement and clearly defines who requires what type of orientation.

This written program does not address procedural items that a Metro Waste Authority employee overseeing a project would typically review with the Contractor. All contractors will be provided an orientation session prior to commencement of work, and documentation will be completed to confirm that this orientation was performed (certification form attached). This orientation will be a one time event, and if necessary repeated if new information is required to be conveyed.

Additionally, before any work is to be done, contractor will provide Metro Waste Authority with a certificate of insurance with a minimum coverage of $1 million and naming Metro Waste Authority as additionally insured.

The following highlights the subject matter to be covered in the contractor orientation session:

1. A hand-out and review of Metro Waste Authority’s Contractor Safety Rules (attached), with emphasis on the following:
   - The need for adhering to all applicable safety requirements
   - The need for using personal protective equipment when necessary,
   - The need to report any accidents or injuries to Metro Waste Authority personnel
   - Emergency phone numbers
   - Requirements for obtaining permits when necessary.

2. An overview of OSHA’s Right to Know program, including an explanation of the potential hazards at the site. The contractor will be informed of the location to obtain the MSDS for all on site products, and be informed of his right to access these at any time.

3. The contractor will be made aware of the facility’s Emergency Response & Remedial Action Plan and the procedures to follow in the event of an emergency.

4. If applicable, OSHA’s Lock-out/Tag-out, Confined Space Requirements, and Hot Work Permit procedures will be explained.

5. Spill prevention and procedures for spill clean-up, including notification of Metro Waste Authority personnel, will be reviewed for contractors who would be using any petroleum based products on MWA property.

6. A “Contractors Safety Declaration” is required and would need to be signed when any contractor is working on site.

For the purpose of this written program, a contractor is defined as any person hired to perform a particular job task at the facility. A contractor is not a delivery person, a visitor, a customer, or a truck driver delivering or picking up solid waste. The aforementioned would not be subject to the requirements of this written program. Current orientation documentation will be kept in a “Contractor’s Orientation File”. Retention of documentation will be for a period of three years.

Contractor Safety Orientation Review

1. Hand-Out and Review of Health and Safety Rules - emphasis on the following:
   - Proper permits need to be completed and approved, when necessary.
   - Proper housekeeping, maintaining a neat work area, and removing all materials for the site when project is completed.

Revised 3/15/12
Contractor Orientation

1. All safety equipment will be supplied by the Contractor. Metro Waste Authority will not supply anything.

2. All traffic and site safety signage must be obeyed.

3. No drugs, alcohol, or weapons are permitted on MWA property.

4. 911 is the emergency number for all facilities.

5. Any accident or injury must be reported to a Metro Waste Authority manager.

6. OSHA’s Right to Know (Hazard Communication) - This program is an OSHA requirement that requires employers to ensure that their employees, including all contractors on site, are aware of any hazards that may be exposed to in the workplace. The Right to Know program usually deals with potential exposures to chemicals in the workplace. Contractors will be made aware of any types of hazards that they may be working around. Contractors will be made aware of the existence of Material Safety Data Sheets (MSDS) for all of the products used on site. The MSDS will provide information on the symptoms and treatment of over exposure to the products. The contractor must be made aware of the location of how to obtain the MSDS. The contractor is welcome to obtain a copy of any MSDS. They need to request a copy to be made The contractor can at any time request that the MSDS be reviewed by MWA should there be a concern about their potential exposure to a product. Should the contractor be directly working around a certain product, a MSDS for that product must automatically be provided to him or her.

7. Emergency Response & Remedial Action Plan (ERRAP) - Contractors will be made aware of the facility’s ERRAP. The ERRAP deals with major emergencies that may arise such as fire, or a major accident. Contractors need to know that should there be an emergency, they will be notified by Metro Waste Authority staff and that they should immediately report the emergency meeting area, located in the ERRAP for that facility. Once all employees and contractors are accounted for, they will be able to leave the site should the situation warrant. All contractors must sign in and out each day at the administrative office of each specific MWA facility. Exceptions to this can be arranged with the appropriate facility’s manager.

8. All spills of petroleum products or any chemical needs to be reported to a Metro Waste Authority supervisor immediately. All spills may be subject to reporting to the IDNR within 4 hours of the spill. The contractor should ensure that the spill is contained before leaving the area to report the spill. Metro Waste Authority will issue guidance on the clean-up procedures.

9. OSHA’s Lock-out/Tag-out - Contractor’s who may have occasion to be repairing equipment on site must follow OSHA’s Lock-out/Tag-out program. If the contractor is a contracted mechanic servicing Metro Waste Authority equipment, they should be made aware that there are lock-out/tag-out procedures for each piece of equipment on site. Contracted mechanics must follow these procedures in order to be in compliance with OSHA’s requirements.
Contractor Declaration

Metro Waste Authority
CONTRACTOR SAFETY DECLARATION

As the duly authorized and designated representative and agent of _______________________, hereinafter called "Contractor", I hereby certify and agree for myself and for and on behalf of Contractor that:

* Contractor has received an orientation briefing including, but not limited to, site-specific safety rules, accident/injury reporting, emergency procedures and potential hazards in the Contractor's work area during routine site operations;

* Contractor will instruct all of its agents and employees in the topics covered at the above orientation, before they are allowed to work on-site;

* Contractor has received a written copy of the site-specific and any relevant task-specific safety rules and will ensure that its employees and agents comply with those rules, as well as any applicable federal, state, and local Safety and Health regulations;

* Contractor will provide required personal protective equipment for its employees and agents working on Metro Waste Authority property;

* Contractor employees have received training in appropriate Safety and Health topics (including, but not limited to, confined space awareness, respiratory protection, hearing conservation, hazard communication and equipment operation), in accordance with state and federal OSHA regulations; and

* Contractor performs regularly scheduled maintenance on owned or leased vehicles and equipment, as per state and federal OSHA regulations (20 CFR 1910 and 1926; Known defects will be repaired prior to operation and, as defects become apparent during equipment operations, the equipment will be taken out of service until repairs are made.

This decision is hereby incorporated into the contractual agreement with:

______________________________________________ Which is dated ____/____/____

______________________________________________   ____/_____/____
Contractor's Representative       Date

______________________________________________  ____/_____/____
MWA Employee Presenting Orientation     Date

Revised 3/15/12
SECTION 01 21 00
ALLOWANCE (LUMP SUM PROJECTS)

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Provisions for handling Allowance.

1.2 ALLOWANCE
A. Allowance(s) are established to provide the Owner with a method for compensating the
   Contractor for specific items of Work that are not completely defined in the Contract Documents
   prior to the award of contract and maybe required to complete the Work.

B. Allowance(s) for minor changes are for the exclusive use of Owner as a result of changed
   conditions, design refinements, and unanticipated design issues.
   1. The Owner will issue a field order or directive to proceed with the work as defined in the
      Allowance below.
   2. The Owner can compensate the Contractor for the work as defined below without issuing a
      change order as long as the costs are within the Allowance amount stated in the Contract.
   3. Owner approval is required prior to the start of the work and/or authorization of progress
      payments for the Allowance(s).
   4. The Owner and Contractor can agree to compensate the Contractor for work covered by the
      Allowance(s) in one or more of the following methods;
      a. Lump sum payment agreed to prior to beginning the work,
      b. Agreed on unit prices measured against actual installed quantities, and/or
      c. Contractor’s actual costs as documented on force account sheets completed daily and
         approved by the Owner. Overhead and Profit will be compensated through the
         Contractor’s Fee as defined in the Contract Documents.

C. Contractor shall include in the Bid an Allowance equal to ten (10) percent of the proposed bid
   amount.
   1. Include Allowance sum on Bid Form on the line provided.
   2. The Total Contract Price shall be the sum of the Base Bid and the Allowance.
   3. At Project closeout and prior to Final Payment, adjust the final Contract Sum accordingly by
      Change Order. Amount of the Change Order shall reflect difference between actual costs of
      all approved Allowance(s) and the Allowance Amount.

PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. The procedure for requesting the approval of substitution of a product that is not equivalent
to a product which is specified by descriptive or performance criteria or defined by
reference to one or more of the following:
   a. Name of manufacturer.
   b. Name of vendor.
   c. Trade name.
   d. Catalog number.
   2. Substitutions are not "or-equals."
   3. This Specification Section does not apply to Proprietary Specifications.

B. Related Specification Sections include but are not necessarily limited to:
   1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
   2. Division 01 - General Requirements.

C. Request for Substitution - General:
   1. Base all bids on materials, equipment, and procedures specified.
   2. Certain types of equipment and kinds of material are described in specifications by means of
references to names of manufacturers and vendors, trade names, or catalog numbers.
   a. When this method of specifying is used, it is not intended to exclude from consideration
other products bearing other manufacturer's or vendor's names, trade names, or catalog
numbers, provided said products are "or-equals," as determined by Engineer.
   3. Other types of equipment and kinds of material may be acceptable substitutions under the
following conditions:
   a. Or-equals are unavailable due to strike, discontinued production of products meeting
specified requirements, or other factors beyond control of Contractor; or,
   b. Contractor proposes a cost and/or time reduction incentive to the Owner after Award of
Bid.

1.2 QUALITY ASSURANCE

A. In making request for substitution, Contractor represents:
   1. Contractor has investigated proposed product, and has determined that it is adequate or
superior in all respects to that specified, and that it will perform function for which it is
intended.
   2. Contractor will provide same guarantee for substitute item as for product specified.
   3. Contractor will coordinate installation of accepted substitution into work, to include
building or facility modifications if necessary, making such changes as may be required for
work to be complete in all respects.
   4. Contractor waives all claims for additional costs related to substitution which subsequently
arise.
   5. Any exceptions to the above shall be clearly stated at the time a request is submitted to
consider a substitution.

1.3 DEFINITIONS

A. Product: Manufactured material or equipment.
1.4 PROCEDURE FOR REQUESTING SUBSTITUTION

A. Substitution shall be considered only:
   1. After Award of Contract.
   2. Under the conditions stated herein.

B. Written request through Contractor only.

C. Transmittal Mechanics:
   1. Follow the transmittal mechanics prescribed for Shop Drawings in Specification Section 01 33 00.
   a. Product substitution will be treated in a manner similar to "deviations," as described in Specification Section 01 25 13.
   b. List the letter describing the deviation and justifications on the transmittal form in the space provided under the column with the heading DESCRIPTION.
      1) Include in the transmittal letter, either directly or as a clearly marked attachment, the items listed in Paragraph D below.

D. Transmittal Contents:
   1. Product identification:
      a. Manufacturer's name.
      b. Telephone number and representative contact name.
      c. Specification Section or Drawing reference of originally specified product, including discrete name or tag number assigned to original product in the Contract Documents.
   2. Manufacturer's literature clearly marked to show compliance of proposed product with Contract Documents.
   3. Itemized comparison of original and proposed product addressing product characteristics including but not necessarily limited to:
      a. Size.
      b. Composition or materials of construction.
      c. Weight.
      d. Electrical or mechanical requirements.
   4. Product experience:
      a. Location of past projects utilizing product.
      b. Name and telephone number of persons associated with referenced projects knowledgeable concerning proposed product.
      c. Available field data and reports associated with proposed product.
   5. Data relating to changes in construction schedule.
   6. Data relating to changes in cost.
   7. Samples:
      a. At request of Engineer.
      b. Full size if requested by Engineer.
      c. Held until substantial completion.
      d. Engineer not responsible for loss or damage to samples.

1.5 APPROVAL OR REJECTION

A. Written approval or rejection of substitution given by the Engineer.

B. Engineer reserves the right to require proposed product to comply with color and pattern of specified product if necessary to secure design intent.

C. In the event the substitution is approved, the resulting cost and/or time reduction will be documented by Change Order in accordance with the General Conditions.

D. Substitution will be rejected if:
   1. Submittal is not through the Contractor with his stamp of approval.
   2. Request is not made in accordance with this Specification Section.
   3. In the Engineer's opinion, acceptance will require substantial revision of the original design.
4. In the Engineer’s opinion, substitution will not perform adequately the function consistent with the design intent.

E. Contractor shall reimburse Owner for the cost of Engineer’s evaluation whether or not substitution is approved.

PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

END OF SECTION
## Substitution Request Form

**EXHIBIT A** *(One Item per each Form)*

<table>
<thead>
<tr>
<th>Project:</th>
<th>Date:</th>
</tr>
</thead>
</table>

| Substitution Requestor: | |

| Contractor: | |

<table>
<thead>
<tr>
<th>Specification Section No:</th>
<th>Paragraph No. (i.e. 2.1.A.1.c):</th>
<th>Specified Item:</th>
</tr>
</thead>
</table>

| Proposed Substitution: | |

Provide Product Data Sheets, Manufacturer’s written installation instructions, drawings, diagrams, or any other information as an attached to this Form that will demonstrate the proposed substitution is an Approved Equal.

In the lines provided state differences between proposed substitutions and specified item. Differences include but are not limited to interrelationship with other items; materials, equipment, function, utility, life cycle costs, applied finished, appearances, and quality.

In the lines provided demonstrate how the proposed substitution is compatible with or modifies other systems, parts, equipment or components of the Project and Work under the Contract.

In the lines provided, describe what effect the proposed substitution has on dimensions indicated on the Drawings and previously reviewed Shop Drawings?

In the lines provided, describe what effect the proposed substitution has on the Construction Schedule and Contract Time.

In the lines provided, describe what effect the proposed substitution has on the Contract Price. This includes all direct, indirect, impact and delay costs.

Manufacturer’s guarantees of the proposed and specified items are:

- [ ] Same
- [ ] Different (explain on attachment)

The undersigned state that the function, utility, life cycle costs, applied finishes, appearance and quality of the proposed substitution are equal or superior to those of the specified item.

For use by Project Representative:

- [ ] Accepted
- [ ] Accepted as Noted
- [ ] Not Accepted
- [ ] Received Too Late

(Contractor’s Signature)

(Contractor’s Firm)

(Date)

(Firms Address)

(Telephone)

Comments:

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 PART 1 - GENERAL

1.1 SUMMARY
A. This Section Includes:
  1. Administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES
A. For lump sum contracts, furnish a statement allocating portions of the Contract Sum to various portions of the Work which will be used as the basis for reviewing Applications for Payment.
  1. Submit preliminary Schedule of Values utilizing the template format and work breakdown provided as an attachment to this Section within 10 days after the effective date of the Agreement.
  2. Before submittal of first progress payment, make corrections and adjustments as necessary to obtain an acceptable Schedule of Values and resubmit to the Engineer.
     a. No progress payment requests will be processed until the Schedule of Values is accepted by the Engineer.

B. Format and Content:
  1. Use the form provided and supplement as necessary using the Project Manual table of contents as a guide to establish additional line items for the Schedule of Values. Provide at least one line item for each Specification Section.
  2. Include the following project identification on the Schedule of Values:
     a. Project name, location, and Owner contract/project number.
     b. Name of Engineer.
     c. Engineer’s project number.
     d. Contractor’s name and address.
     e. Date of submittal.
  3. Arrange the Schedule of Values for the lump sum Bid Item No. 1 (or, alternatively, the Bid Item No. fully executed) per Specification Section 00 80 00, with the following subdivisions, description of work and dollar values for each:
     a. Subcontractor work.
     b. Manufacturer or fabricator.
     c. Supplier.
     d. Contractor work.
  4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports.
  5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  7. Each item in the Schedule of Values and Applications for Payment shall be complete.
     Include total cost and proportionate share of general overhead and profit for each item.
     a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense at Contractor’s option.

1.3 APPLICATIONS FOR PAYMENT
A. Each Application for Payment shall be consistent with previous applications and payments as recommended by the Engineer and approved by Owner.
B. The date for each progress payment is on or about the first of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends 10 days before the date for each progress payment.

C. Requests for progress payments shall be submitted at least 10 days before the date established for each progress payment, but not more often than once a month. Use forms provided in Contract Documents for Applications for Payment. Sample copy of the Application for Payment and Continuation Sheet is included in Section 01 29 01A.

D. Application Preparation Procedures:

1. When requested by the Contractor, the Engineer will determine the estimated quantities and classifications of Unit Price Work performed.
   a. Preliminary determinations will be reviewed with the Contractor before submitting Application for Payment.
   b. Contractor will complete the Application for Payment based on Engineer’s decision on actual quantities and classifications.
   c. Engineer will submit copies of Application for Payment to Contractor for certification.
      1) Contractor shall submit signed Application for payment to Owner for approval within time frame agreed to at the Preconstruction Conference.

2. For a lump sum price contract, the Contractor shall prepare a preliminary determination for payment based on the approved Schedule of Values and review with Engineer before completing Application for Payment.
   a. Payment for lump sum bid items shall be in the amount of scheduled values of each of the aggregate components comprising the lump sum items multiplied by the respective percent completion estimate.

3. If payment is requested for materials and equipment not incorporated in the Work, then the following shall be submitted with the Application for Payment:
   a. Evidence that materials and equipment are suitably stored at the site or at another location agreed to in writing.
   b. A bill of sale, invoice, or other documentation warranting that the materials and equipment are free and clear of all liens.
   c. Evidence that the materials and equipment are covered by property insurance.

4. Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of Contractor.

E. With each Application for Payment, submit the following documents:

1. Waivers of liens from subcontractors and suppliers for the construction period covered by the previous application.
   a. Submit partial waivers on each item for amount requested before deduction for retainage on each item.
   b. When an application shows completion for an item, submit final or full waivers.
   c. Owner reserves the right to designate which entities involved in the Work shall submit waivers.
   d. Submit final Application for Payment with or proceeded by final waivers from every entity involved with performance of the Work covered by the application.
   e. Submit waivers of lien on forms executed in a manner acceptable to Owner.

2. Project schedule updated in accordance with criteria contained in Section 01 11 20 - Job Conditions.

F. The following administrative actions and submittals shall precede or coincide with submittal of first Application for Payment:

1. List of subcontractors.
2. Schedule of Values.
3. Contractor’s construction schedule.
5. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
G. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Insurance certificates for products and completed operations where required and proof that taxes, fees and similar obligations were paid.
   3. Updated final statement, accounting for final changes to the Contract Sum.
   4. Consent of Surety to Final Payment.
   5. Final lien waivers as evidence that claims have been settled.
   6. Final liquidated damages settlement statement.
   7. Requirements listed in Section 01 77 01 – Closeout Procedures.

1.4 MEASUREMENT AND PAYMENT

A. Lump Sum Bid Items General:
   1. Measurement of lump sum bid items will be based on an estimated percent complete of the various components of the lump sum item established by the Contractor’s Schedule of Values and approved by the Engineer. Contractor will make progress estimates on or about the first day of the month, and submit to Engineer for review and approval.

B. Unit Price Items:
   1. Remove and Replace Unsuitable Soil:
      a. Measurement of Bid Item “Remove and Replace Unsuitable Soil” will be by tape or survey instrument. Payment will be for the volume excavated (and replaced) calculated in such a manner appropriate for the geometry of the excavation.

PART 2 - PRODUCTS (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

END OF SECTION
**Progress Estimate - Lump Sum Work**

For (Contract): Application Number:  
Application Period: Application Date:  

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<tr>
<th>Specification Section No.</th>
<th>Description</th>
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<th>F</th>
<th>G</th>
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<td>MCTS push wall extension</td>
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**Contractor's Application**

EJCDC® C-620 Contractor's Application for Payment  
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Page 1 of 2
## Progress Estimate - Unit Price Work

For (Contract):

Application Period:

Application Number:

Application Date:

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<th>Quantity</th>
<th>Units</th>
<th>Unit Price</th>
<th>Total Value of Item ($)</th>
<th>Estimated Quantity Installed</th>
<th>Materials Presently Stored (not in C)</th>
<th>Total Completed and Stored to Date (D + E)</th>
<th>% (F / B)</th>
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**Totals**
PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for project meetings including, but not limited to, the following:
   1. Preconstruction conference.
   2. Progress meetings.
   3. Preinstallation conferences.

1.2 PRECONSTRUCTION CONFERENCE

A. Engineer will schedule a preconstruction conference held at the Metro Central Transfer Station within 10 days after the Contract Times start to run and before Work at the site is started.

B. Authorized representatives of the Owner, Engineer, the Contractor and its project manager and superintendent; major subcontractors; and other concerned parties shall attend the conference.

   1. All participants at the conference shall be familiar with the Project and authorized to make binding decisions of matters relating to the Work.

C. The Engineer will record meeting notes and distribute notes to the Owner, Contractor, and other parties agreed upon by the Owner.

1.3 PROGRESS MEETINGS

A. Progress meetings at the Project site will be scheduled by the Engineer at regular intervals, currently anticipated to be biweekly.

B. In addition to representatives of the Owner, the Engineer and the Contractor, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities prior to the next progress meeting shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to make binding decisions on matters relating to the Work.

C. Proposed meeting agenda may include:

   1. Review progress since the last meeting.

   2. Review the present and future needs of each entity present, including the following:

      a. Interface requirements.
      b. Time.
      c. Sequences.
      d. Status of submittals.
      e. Deliveries.
      f. Off-site fabrication problems.
      g. Access.
      h. Site utilization.
      i. Temporary facilities and services.
      j. Hours of work.
      k. Hazards and risks.
      l. Housekeeping.
      m. Quality and work standards.
      n. Change orders.
      o. Documentation of information for payment requests.
D. Updated project schedules, submitted in accordance with Section 01 29 01 – Payment Procedures, shall be provided by the Contractor at the meeting.
1. Reflect the current status (updated by the Contractor) as of the time of the meeting.
2. Subsequent to the meeting the schedule shall be updated to reflect issues addressed at Project Meetings.
E. Review Status of On-Site Record Documents.
F. The Engineer will record meeting notes and distribute notes to the Owner, Contractor, and other parties agreed upon by the Owner.

1.4 PRE-INSTALLATION CONFERENCES
A. Contractor shall schedule a pre-installation conference at the Project site at least 7 days before each construction activity that requires coordination with other construction. The schedule shall be coordinated with the Engineer and Owner.
B. The installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting.
1. Advise the Engineer of scheduled meeting dates.
2. Engineer will record significant discussions, agreements and disagreements of each conference and the approved schedule and will distribute the record of the meeting to the Contractor, Owner and other parties agreed upon by the Owner.
3. Do not proceed with the installation of items not successfully concluded.
4. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

PART 2 - PRODUCTS (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Mechanics and administration of the submittal process for:
      a. Shop Drawings.
      b. Samples.
      c. Miscellaneous submittals.
   2. General content requirements for Shop Drawings.

B. Related Sections include but are not necessarily limited to:
   1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
   2. Division 01 - General Requirements.
   3. Sections in Divisions 2 through 46, as applicable, identifying required submittals.

1.2 DEFINITIONS

A. Shop Drawings:
   1. See General Conditions.
   2. Product data and samples are Shop Drawing information.

B. Miscellaneous Submittals:
   1. Submittals other than Shop Drawings.
   2. Representative types of miscellaneous submittal items include but are not limited to:
      a. Construction schedule.
      b. Concrete, soil compaction, and pressure test reports.
      c. Installed equipment and systems performance test reports.
      d. Manufacturer's installation certification letters.
      e. Instrumentation and control commissioning reports.
      f. Warranties.
      g. Evidence of Health and Safety Plan implementation.
      h. Survey data.
      i. Cost breakdown (Schedule of Values).
   3. For-Information-Only submittals upon which the Engineer is not expected to conduct review or take responsive action may be so identified in the Contract Documents.

1.3 SUBMITTAL SCHEDULE

A. Schedule of Shop Drawings:
   1. Prepare a schedule identifying all submittals anticipated and the timeframe in which they will be submitted.
   2. Submitted and approved within 10 days of receipt of Notice to Proceed.
   3. Account for multiple transmittals under any Specification Section where partial submittals will be transmitted.

B. Shop Drawings:
   1. Submittal and approval of all Shop Drawings shall be completed within 20 days of Notice to Proceed, unless the content prevents submittal within such a timeframe.
1.4 PREPARATION OF SUBMITTALS

A. General:
   1. All submittals and all pages of all copies of a submittal shall be completely legible.
   2. Submittals which, in the Engineer’s sole opinion, are illegible will be returned without review.

B. Shop Drawings:
   1. Scope of any submittal and letter of transmittal:
      a. Limited to one specification section.
      b. Do not submit under any specification section entitled (in part) "Basic Requirements"
         unless the product or material submitted is specified in a “Basic Requirements”
         Specification Section.
   2. Numbering letter of transmittal:
      a. Include as prefix the specification section number followed by a series number ("-xx",
         beginning with '01") and increasing sequentially with each additional transmittal.
      b. If more than one submittal under any specification section, assign consecutive series
         numbers to subsequent transmittal letters.
   3. Describing transmittal contents:
      a. Provide listing of each component or item in submittal capable of receiving an independent review action.
      b. Identify for each item:
         1) Manufacturer and Manufacturer’s Drawing or data number.
         2) Contract Document tag number(s).
         3) Unique page numbers for each page of each separate item.
      c. When submitting "or-equal" items that are not the products of named manufacturers,
         include the words "or-equal" in the item description.
   4. Contractor certification of review and approval:
      a. Contractor's review and approval stamp shall be applied either to the letter of transmittal or a separate sheet preceding each independent item in the submittal.
         1) Stamp may be either a wet ink stamp or electronically embedded.
         2) Clearly identify the person who reviewed the submittal and the date it was reviewed.
         3) Shop Drawing submittal stamp shall read "(Contractor's Name) has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval as stipulated in the General Conditions."
      b. Submittals containing multiple independent items shall be prepared with an index sheet for each item listing the discrete page numbers for each page of that item, which shall be stamped with the Contractor's review and approval stamp.
         1) Individual pages or sheets of independent items shall be numbered in a manner that permits Contractor's review and approval stamp to be associated with the entire contents of a particular item.
   5. Resubmittals:
      a. Number with original root number and a suffix letter starting with "A" on a (new)
         duplicate transmittal form.
      b. Do not increase the scope of any prior transmittal.
      c. Provide cover letter indicating how each "B", "C", or "D" Action from previous
         submittal was addressed and where the correction is found in the resubmittal.
      d. Account for all components of prior transmittal.
         1) If items in prior transmittal received "A" or "B" Action code, list them and indicate "A" or "B" as appropriate.
            a) Do not include submittal information for items listed with prior "A" or "B" Action in resubmittal.
2) Indicate "Outstanding-To Be Resubmitted at a Later Date" for any prior "C" or "D" Action item not included in resubmittal.
   a) Obtain Engineer's approval to exclude items.
6. For 8-1/2 x 11 IN, 8-1/2 x 14 IN, and 11 x 17 IN size sheets, provide three (3) copies of each page for Engineer plus the number required by the Contractor.
   a. The number of copies required by the Contractor will be defined at the Preconstruction Conference, but shall not exceed 3.
   b. All other size sheets:
      1) Submit one (1) reproducible transparency or high resolution print and one (1) additional print of each drawing until approval is obtained.
      2) Utilize mailing tube; do not fold.
      3) The Engineer will mark and return the reproducible to the Contractor for his reproduction and distribution.
7. Provide clear space (3 IN SQ) for Engineer stamping of each component defined in PREPARATION OF SUBMITTALS – Contractor Stamping.
8. Contractor shall not use red color for marks on transmittals.
   a. Duplicate all marks on all copies transmitted, and ensure marks are photocopy reproducible.
   b. Engineer will use red marks or enclose Engineer’s marks in a cloud.
9. Transmittal contents:
   a. Coordinate and identify Shop Drawing contents so that all items can be easily verified by the Engineer.
   b. Provide submittal information or marks defining specific equipment or materials utilized on the Project.
      1) Generalized product information, not clearly defining specific equipment or materials to be provided, will be rejected.
   c. Identify equipment or material use, tag number, Drawing detail reference, weight, and other project specific information.
   d. Provide sufficient information together with technical cuts and technical data to allow an evaluation to be made to determine that the item submitted is in compliance with the Contract Documents.
   e. Do not modify the manufacturer's documentation or data except as specified herein.
   f. Submit items such as equipment brochures, cuts of fixtures, product data sheets or catalog sheets on 8-1/2 x 11 IN pages.
      1) Indicate exact item or model and all options proposed.
   g. When a Shop Drawing submittal is called for in any specification section, include as appropriate, scaled details, sizes, dimensions, performance characteristics, capacities, test data, anchoring details, installation instructions, storage and handling instructions, color charts, layout drawings, rough-in diagrams, wiring diagrams, controls, weights and other pertinent data in addition to information specifically stipulated in the specification section.
      1) Arrange data and performance information in format similar to that provided in Contract Documents.
   h. If proposed equipment or materials deviate from the Contract Drawings or Specifications in any way, clearly note the deviation and justify the said deviation in detail in a separate letter immediately following transmittal sheet. Any deviation from plans or specifications not depicted in the submittal or included but not clearly noted by the Contractor may not have been reviewed. Review by the Engineer shall not serve to relieve the Contractor of the contractual responsibility for any error or deviation from contract requirements.
10. Samples:
   a. Identification:
      1) Identify sample as to transmittal number, manufacturer, item, use, type, project designation, tag number, standard specification section or drawing detail reference, color, range, texture, finish and other pertinent data.
2) If identifying information cannot be marked directly on sample without defacing or adversely altering samples, provide a durable tag with identifying information securely attached to the sample.

b. Include application specific brochures, and installation instructions.

c. Provide Contractor's review and approval certification stamp or Contractor's Submittal Certification form as indication of Contractor's checking and verification of dimensions and coordination with interrelated work.

d. Resubmit samples of rejected items.

C. Miscellaneous Submittals:
1. Prepare in the format and detail specified in specification requiring the miscellaneous submittal.

### 1.5 TRANSMITTAL OF SUBMITTALS

A. Shop Drawings, Samples:
1. Transmit all submittals to:
   As Designated at Pre-Construction Conference.
2. Utilize two (2) copies of attached Exhibit "A" to transmit all Shop Drawings and samples.
3. All submittals must be from Contractor.
   a. Submittals will not be received from or returned to subcontractors.

B. Miscellaneous Submittals:
1. Transmit under Contractor's standard letter of transmittal or letterhead.
2. Submit in triplicate or as specified in individual specification section.
3. Transmit to:
   As Designated at Pre-Construction Conference.
4. Provide copy of letter of transmittal to Owner's and Engineer's Representative.
   a. Exception for concrete, soils compaction and pressure test reports.
      1) Transmit one copy to Owner and Engineer’s Representative.
      2) Transmit one copy to location and individual indicated above for other miscellaneous submittals.

C. Electronic Transmission of Submittals:
1. Transmittals may be made electronically.
   a. Use Owner’s project-specific cloud-based server system (i.e. Dropbox or similar) and an email to the Engineer containing links to each unique submittal to formally time and date stamp each submittal.
   b. Protocols and processes will be determined at the Pre-Construction Conference.
2. Scan all transmittals into Adobe Acrobat Portable Document Format (PDF), latest version, with printing enabled.
   a. Do not password protect or lock the PDF document.
   b. Rotate sheets that are normally viewed in landscape mode so that when the PDF file is opened the sheet is in the appropriate position for viewing.
3. Required signatures may be applied prior to scanning for transmittal.

### 1.6 ENGINEER'S REVIEW ACTION

A. Shop Drawings and Samples:
1. Items within transmittals will be reviewed for overall design intent and will receive one of the following actions:
   a. A - FURNISH AS SUBMITTED.
   b. B - FURNISH AS NOTED (BY ENGINEER).
   c. C - REVISE AND RESUBMIT.
d. D - REJECTED.
e. E - ENGINEER'S REVIEW NOT REQUIRED.

2. Submittals received will be initially reviewed to ascertain inclusion of Contractor's approval stamp.
a. Submittals not stamped by the Contractor or stamped with a stamp containing language other than that specified herein will not be reviewed for technical content and will be returned rejected.

3. In relying on the representation on the Contractor’s review and approval stamp, Owner and Engineer reserve the right to review and process poorly organized and poorly described submittals as follows:
a. Submittals transmitted with a description identifying a single item and found to contain multiple independent items:
   1) Review and approval will be limited to the single item described on the transmittal letter.
   2) Other items identified in the submittal will:
      a) Not be logged as received by the Engineer.
      b) Be removed from the submittal package and returned without review and comment to the Contractor for coordination, description and stamping.
      c) Be submitted by the Contractor as a new series number, not as a re-submittal number.

b. Engineer, at Engineer’s discretion, may revise the transmittal letter item list and descriptions, and conduct review.
   1) Unless Contractor notifies Engineer in writing that the Engineer’s revision of the transmittal letter item list and descriptions was in error, Contractor’s review and approval stamp will be deemed to have applied to the entire contents of the submittal package.

4. Submittals returned with Action "A" or "B" are considered ready for fabrication and installation.
a. If for any reason a submittal that has an "A" or "B" Action is resubmitted, it must be accompanied by a letter defining the changes that have been made and the reason for the resubmittal.
b. Destroy or conspicuously mark "SUPERSEDED" all documents having previously received "A" or "B" Action that are superseded by a resubmittal.

5. Submittals with Action "A" or "B" combined with Action "C" (Revise and Resubmit) or "D" (Rejected) will be individually analyzed giving consideration as follows:
a. The portion of the submittal given "C" or "D" will not be distributed (unless previously agreed to otherwise at the Preconstruction Conference).
   1) One copy or the one transparency of the "C" or "D" drawings will be marked up and returned to the Contractor.
      a) Correct and resubmit items so marked.
   b. Items marked "A" or "B" will be fully distributed.
   c. If a portion of the items or system proposed are acceptable, however, the major part of the individual drawings or documents are incomplete or require revision, the entire submittal may be given "C" or "D" Action.
      1) This is at the sole discretion of the Engineer.
      2) In this case, some drawings may contain relatively few or no comments or the statement, "Resubmit to maintain a complete package."
      3) Distribution to the Owner and field will not be made (unless previously agreed to otherwise).

6. Failure to include any specific information specified under the submittal paragraphs of the Specifications will result in the submittal being returned to the Contractor with "C" or "D" Action.
7. Calculations required in individual Specification Sections will be received for information purposes only, as evidence calculations have been stamped by the professional as defined in the specifications and for limited purpose of checking conformance with given performance and design criteria.
   a. The Engineer is not responsible for checking the accuracy of the calculations and the calculations will be returned stamped "E. Engineer's Review Not Required" to acknowledge receipt.
8. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than two submittals.
   a. Engineer will record Engineer’s time for reviewing a third 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, with said costs being deducted from the lump sum amount shown in the Contractor's Bid.
9. Transmittals of submittals which the Engineer considers as "Not Required" submittal information, which is supplemental to but not essential to prior submitted information, or items of information in a transmittal which have been reviewed and received "A" or "B" Action in a prior submittal, will be returned with Action "E. Engineer's Review Not Required."
10. Samples may be retained for comparison purposes.
   a. Remove samples when directed. Include in bid all costs of furnishing and removing samples.
11. Approved samples submitted or constructed, constitute criteria for judging completed work.
   a. Finished work or items not equal to samples will be rejected.

PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

END OF SECTION
### EXHIBIT A
**Shop Drawing Transmittal No.**

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<th>Item No.</th>
<th>No. Copies</th>
<th>Description</th>
<th>Manufacturer</th>
<th>Mfr/Vendor Dwg or Data No.</th>
<th>Action Taken*</th>
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Remarks:

* The Action Designated Above is in Accordance with the Following Legend:

- **A** - Furnish as Submitted
- **B** - Furnish as Noted
- **C** - Revise and Submit
  1. Not enough information for review.
  2. No reproducibles submitted.
  3. Copies illegible.
  5. Wrong sequence number.
  6. Wrong resubmittal number.
  7. Wrong spec. section.
  8. Wrong form used.
  9. See comments.
- **D** - Rejected
- **E** - Engineer's review not required
  1. Submittal not required.
  2. Supplemental Information. Submittal retained for informational purposes only.
  3. Information reviewed and approved on prior submittal.
  4. See comments.
  5. Delegated Design - Submittal received as requested by the Contract Documents. The Engineer did not review the engineering or technical content of the submittal.

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. Any deviation from plans or specifications not depicted in the submittal or included but not clearly noted by the Contractor may not have been reviewed. Review by the Engineer shall not serve to relieve the Contractor of the contractual responsibility for any error or deviation from contract requirements.

Comments:

By Date

Distribution: Contractor [ ] File [ ] Field [ ] Owner [ ] Other [ ]

HDR Project No. 10066279
Metro Waste Authority
MCTS Tipping Floor Replacement Design - SUBMITTALS
01 33 00 - 7
SECTION 01 33 04
OPERATION AND MAINTENANCE DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY
A. Section includes administrative and procedural requirements for operation and maintenance manuals and instruction, including the following.
   1. Obtaining and submitting reference texts.
   2. Preparing and submitting operation and maintenance manuals for equipment and building systems.
   3. Preparing and submitting equipment maintenance data cards.

1.2 SUBMITTALS
A. Submittal Schedule:
   1. Provide three (3) copies of operation and maintenance manuals to the Engineer 30 days prior to equipment start-up and operator training or substantial completion, whichever occurs first.
      a. Partial payment estimates will not be recommended for payment until the draft operation and maintenance manuals are received per schedule.
      b. Make corrections or modifications to operation and maintenance manuals to comply with the Engineer’s comments and/or to accurately describe equipment furnished.
      c. Refer to individual specification sections for equipment Operation and Maintenance submittal requirements.
   2. Submit final operation and maintenance manual information to the Engineer prior to final payment.

B. Format of Submittal:
   1. Prepare operation and maintenance manuals in the form of an instructional manual for use by operating and maintenance personnel.
   2. Provide white heavy-duty, commercial-quality, 3-ring, vinyl-covered, loose-leaf binders not larger than 3 IN thickness, sized to receive 8-1/2 by 11 IN paper.
      a. Provide a clear plastic sleeve on the spine and front cover to hold labels describing contents.
      b. Provide pockets in the covers to receive folded sheets.
      c. Identify each binder on front and spine, with the printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter covered.
   3. Provide heavy paper dividers with celluloid-covered tabs for each separate section.
      a. Mark each tab to indicate contents.
      b. Provide a typed description of the product or major parts of equipment included in the section on each divider.
   4. Where written material is required, use the manufacturer's standard printed materials or provide specially prepared data, neatly typewritten, on 8-1/2 x 11 IN, 20 LBS/SF white bond paper.
   5. Small data sheets (8-1/2 x 11 IN or 11 x 17 IN) shall be provided with reinforced binder holes.
   6. Drawings:
      a. Where manuals require Drawings or diagrams up to 11 x 17 IN, provide reinforced, punched binder tabs on Drawings and bind in with text.
      b. If drawings are larger than 11 x 17 IN, place the Drawing, neatly folded, in an 8-1/2 x 11 IN envelope with punched binder tabs and insert in the binder and insert a typewritten page indicating Drawing title, description of contents.
C. Manual Content:

1. Include the following information in each manual for each major component:
   a. Contractor responsible for component.
   b. Design factors and assumptions.
   c. Copies of applicable Shop Drawings and Product Data.
   d. Material, finish, system or equipment identification, including:
      1) Name of manufacturer.
      2) Model number.
      3) Serial number of each component.
   e. Equipment operating data:
      1) Operation instructions.
      2) Emergency instructions.
      3) Wiring diagrams.
      4) Inspection and test procedures.
   f. Maintenance procedures and schedules.
   g. Precautions against improper use and maintenance.
   h. Copies of warranties and service contracts.
   i. Repair instructions, including listings of spare parts for equipment.
   j. Local sources of required maintenance materials and related services.

2. Organize each manual into separate sections for each related product or piece of equipment.

3. Provide a title page in a transparent, plastic envelope as the first sheet of each manual. As a minimum, provide the following information:
   a. Subject matter covered by the manual.
   b. Name and address of the Project.
   c. Name of Owner.
   d. Date of submittal.
   e. Name, address, and telephone number of the Contractor.

4. After title page, include a typewritten table of contents for each volume.

5. Provide a general information section immediately following table of contents, listing each product included in the manual, identified by product name.
   a. Under each product, list the name, address, and telephone number of the subcontractor or installer and the maintenance contractor.
   b. Include a local source for replacement parts for equipment.

6. Provide manufacturer's product data.
   a. Where standard printed data is provided, include only those sheets that are pertinent to the part or product installed.
   b. Mark each sheet to identify each part or product included in the installation.
   c. Identify data that is applicable to the installation, and delete references to information that is not applicable.

7. Prepare written text to provide necessary information where manufacturer's standard printed data is not available, and the information is necessary for proper maintenance of materials or finishes, or for proper operation and maintenance of equipment or systems.
   a. Prepare written text where it is necessary to provide additional information or to supplement data included elsewhere in the manual.
   b. Organize text in a consistent format under separate headings for different procedures.
   c. Provide a logical sequence of instruction for each operation or maintenance procedure.

8. Provide specially prepared Drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems or to provide control or flow diagrams, including tabulated listing of all system components.

9. Submit control diagrams (as installed) by controls manufacturer.

10. Provide a copy of each warranty or service contract in the appropriate manual for the information of the Owner’s operating personnel.
    a. Provide written data outlining procedures to follow in the event of product failure.
    b. List circumstances and conditions that would affect the validity of warranty.
1.3 EQUIPMENT AND SYSTEMS OPERATION AND MAINTENANCE MANUALS

A. Submit 3 copies of each equipment and systems maintenance manual, in final form, to the Engineer.

B. Provide separate manuals for each unit of equipment, each building operation system, and each electric and electronic system.

C. Provide the following information for each piece of equipment, each building operation system, and each electric or electronic system, where applicable:
   1. Provide a complete description of each unit and related component parts, including the following, as applicable:
      a. Equipment or system function.
      b. Operating characteristics.
      c. Limiting conditions.
      d. Performance curves.
      e. Engineering data and tests.
      f. Complete nomenclature and number of replacement parts.
   2. For each manufacturer of a component part or piece of equipment, provide the following, as applicable:
      a. Printed operation and maintenance instructions.
      b. Assembly drawings and diagrams required for maintenance.
      c. List of items recommended to be stocked as spare parts.
   3. Provide information detailing essential maintenance procedures, including the following, as applicable:
      a. Routine operations.
      b. Troubleshooting guide.
      c. Disassembly, repair, and reassembly.
      d. Alignment, adjusting, and checking.
   4. Provide information on equipment and system operation procedures, including the following, as applicable:
      a. Startup procedures.
      b. Equipment or system break-in.
      c. Routine and normal operating instructions.
      d. Regulation and control procedures.
      e. Instructions on stopping.
      f. Shutdown and emergency instructions.
      g. Summer and winter operating instructions.
      h. Required sequences for electric or electronic systems.
      i. Special operating instructions.
   5. Provide a schedule of routine servicing and lubrication requirements, including a list of required lubricants for equipment with moving parts.
   6. Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.
   7. Provide as-installed, color-coded, piping diagrams, where required for identification.
   8. Provide charts of valve-tag numbers, with the location and function of each valve.
   9. For electric and electronic systems, provide complete circuit directories of panelboards, including the following, as applicable:
      a. Electric service.
      b. Controls.
      c. Communication.

D. Complete an "Equipment Maintenance Data Card" for each piece of equipment. (Blank card shown in attachment).
E. Provide complete information in the equipment and systems manual on products specified for the following:

1. Plumbing:
   a. Water meters.
   b. Pumping equipment.
   c. Control equipment.

2. Electrical/Instrumentation:
   a. Communication equipment.
   b. Field and panel mounted instruments.
   c. Special instrumentation and display equipment.
   d. Main switch gear.
   e. Motor control centers.
   f. Motors.

3. Piping:
   a. Valves and valve operators.
   b. Telescopic valves and operators.

4. Process Equipment and Appurtenances:
   a. Pumps.
   b. Hoists.

5. Collection System Equipment
   a. Lift stations.
   b. Safety equipment.

PART 2 - PRODUCT (NOT APPLICABLE TO THIS SECTION)

PART 3 - EXECUTION (NOT APPLICABLE TO THIS SECTION)

END OF SECTION
### Equipment Maintenance Data Card

Unit:  
Component:  
Manufacturer:  
Supplier:  
Installation Date:  
Capacity:  
Model:  
Serial No.:  
Other:  

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Equipment:  
Manufacturer:  
Type:  
Serial No.:  
Voltage:  
Amps:  
RPM:  
Phase:  
Frame:  
HP:  

**Equipment No.**
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Minimizing the pollution of air, water, or land; control of noise, the disposal of solid waste materials, and protection of deposits of historical or archeological interest.
2. Sequencing site controls using a work schedule that balances the timing of land disturbance activities and the installation of measures to control erosion and sedimentation in order to reduce on-site erosion, off-site sedimentation and maintain water quality in a receiving stream.

B. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
2. Division 01 - General Requirements.
3. SUDAS Division 1.

1.2 SUBMITTALS

A. Contractor shall prepare all required compliance plans necessary for alternate management strategies. Such plans include those listed as Shop Drawings below.

B. Shop Drawings:
1. See Section 01 33 00.
2. Prior to the start of any construction activities submit:
   a. A detailed plan of all methods of control and preventive measures to be utilized for environmental protection.
   b. A drawing of the work area showing haul routes, storage areas, access routes and current land conditions including trees and vegetation stockpile areas, areas of planned disturbance beyond those designated, and any soil erosion and sediment control features (silt fence, or other best management practices) that will be disturbed and/or relocated.
   c. Modifications required by the construction activities to the Owner’s approved storm water pollution prevention plan including the following provisions, if required.
3. Contractor is required to develop a project specific plan identifying spill prevention, containment and countermeasures addressing fuel storage and re-fueling operations and other chemical handling activities, if any.
   a. If the Contractor does not comply with the Owner’s Stormwater Pollution Prevention Plan (SWPPP), the Contractor shall prepare and submit for Owner’s approval a Project-specific SWPPP. Such a Project-specific SWPPP shall include the following:
      1) Erosion Protection:
         a) Code of Federal Regulations, 40 CFR 122.26, and the Iowa Administrative Code, 567-60: The Contractor shall comply with soil erosion control requirements of the Iowa Code, the Iowa Department of Natural Resources (IDNR) NPDES Permit and local ordinances. The Contractor shall take all necessary measurements to protect against erosion and dust pollution on this site.
b) Damage Claims: The Contractor will hold the Owner harmless from any and all claims of any type whatsoever resulting from damages to adjoining public or private property, including reasonable attorney’s fees incurred to Owner. Further, if the Contractor fails to take necessary steps to promptly remove earth sedimentation or debris which comes onto adjoining public or private property, the Owner may, but need not, remove such items and deduct the cost thereof from amounts due the Contractor.

2) Pollution Prevention Plan:
   
a) Site Description: Excavation and filling, trenching, grading, and drainage activities in this project will be required to drain storm water controls.

b) Potential sources of pollution as a result of this project relate to silts, clays, and sediment and other materials which may be transported as a result of a storm event from the construction site.

c) Responsibility: The Pollution Prevention Plan illustrates general measures to be taken for compliance with the permit. All mitigation measures required as a result of activities are the responsibility of the Contractor. The Contractor shall take all actions necessary for installation of control measures for compliance with permit and SWPPP requirements.

d) Controls: The Contractor shall be responsible for compliance and fulfilling all the requirements of the general permit, including, but not limited to, the following:

   (1) The Contractor shall protect adjoining property, including public utilities, sanitary and storm drainage systems and streets from any damage resulting from movement of earth or other debris from project site. Repair any damage immediately at no additional cost.

   (2) The Contractor shall prevent accumulation of earth, siltation or debris on adjoining public or private property from project site. Remove any accumulation of earth or debris immediately and take remedial actions for prevention.

   (3) Prior to site clearing and grading operations, Contractor shall install silt fence and sediment controls downstream of disturbing activities as required and as shown on the Drawings. Contractor will then proceed with project.

   (4) The Contractor shall route existing storm water flows away from construction area without disruption of existing flows paths in areas surrounding the Limits of Construction.

   (5) The Contractor shall preserve existing vegetation in areas not needed for construction.

   (6) Erosion control methods to be used on this project are shown on the Erosion Control Plan.

   (7) As areas reach their final grade and upon the completion of the storm drainage system, provide additional siltation fence, temporary silt basins and earth dikes, silt fence ditch checks and silt fence enclosures around all storm inlets. The Contractor shall provide additional siltation fence and earth dikes as may be required on all embankments, earth stockpiles and other areas to provide control.

   (8) The Contractor shall provide temporary and/or permanent seeding of areas as soon as practical upon completion of grading.

   (9) If construction activity is not planned to occur in a disturbed area for at least twenty-one days, the area shall be stabilized by temporary erosion controls within fourteen days of ceasing construction activities. The Contractor is required to maintain all temporary and permanent erosion control measures in working order, including cleaning, repairing, replacement and sediment removal throughout the permit period. Cleaning of sediment control devices shall begin before the features have lost 50 percent of their capacity.
PART 3 - EXECUTION

3.1 INSTALLATION

A. Contractor shall develop localized storm water controls to comply with requirements of approved SWPPP.

B. Employ and utilize environmental protection methods, obtain all necessary permits, and fully observe all local, state, and federal regulations.

C. Land Protection:
   1. Except for any work or storage area and access routes specifically assigned for the use of the Contractor, the land areas outside the limits of construction shall be preserved in their present condition. Contractor shall confine construction activities to areas defined for work within the Contract Documents. Alternate access routes which will result in land disturbance shall be submitted for approval as part of the work plan.
   2. Manage and control all borrow areas, work or storage areas, access routes and embankments to prevent sediment from entering nearby water or land adjacent to the work site.
   3. Unless earthwork is immediately covered, protect all side slopes and backslopes immediately upon completion of final grading.
   4. Plan and execute earthwork in a manner to minimize duration of exposure of unprotected soils.
   5. Except for areas designated by the Contract Documents to be cleared and grubbed, the Contractor shall not deface, injure or destroy trees and vegetation, nor remove, cut or disturb them without approval of the Engineer. Any damage caused by the Contractor’s equipment or operations shall be restored as nearly as possible to its original condition at the Contractor’s expense.
   6. Grade all borrow areas to drain and prevent on-site ponding of water.

D. Solid Waste Disposal:
   1. Contractor shall maintain the working area in a reasonably clear and orderly condition and collect solid waste on a daily basis or as directed by Engineer. Contractor is responsible for maintaining a refuse bin and/or receptacle at field office.
   2. Contractor is responsible for proper disposal of all solid waste generated.

E. Control of Concrete Waste:
   1. Concrete slurry waste shall not be allowed to enter storm drains or watercourses and shall be collected and disposed of or placed in a temporary concrete washout facility.
   2. A sign shall be installed adjacent to each temporary concrete washout facility to inform concrete equipment operators to utilize the proper facilities.
   3. Temporary concrete washout facilities shall be located a minimum of 50 FT from storm drain inlets, open drainage facilities, protected vegetation, and water courses. Each facility shall be located away from construction traffic or access areas to prevent disturbance or tracking.
   4. Temporary concrete washout facilities shall be constructed above grade or below grade at the option of the Contractor. Temporary concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
      a. Above grade temporary concrete washout facility: Straw bales or sandbags secured with wood or steel stakes shall form the washout area barrier with a lining comprised of a minimum of 10 mil polyethylene sheeting free of holes, tears, or other defects that compromise the impermeability of the material.
b. Below grade temporary concrete washout facility: Lath and flagging at the perimeter of the lined area shall be commercial type anchoring and marking three sides of the basin comprised of a minimum of 10 mil polyethylene sheeting free of holes, tears, or other defects that compromise the impermeability of the material. Sand bags shall be spaced around the perimeter of the lined area to hold the lining in place.

5. Washout of concrete trucks shall be performed in designated areas only. Only concrete from mixer chutes shall be washed into concrete wash out.

6. Once concrete wastes are washed into the designated area and allowed to harden, the concrete shall be broken up, removed, and disposed of on a regular basis.

7. When temporary concrete washout facilities are no longer required for the work, the hardened concrete shall be removed and disposed of. Materials used to construct temporary concrete washout facilities shall be removed from the site of the work and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities shall be backfilled and repaired.

F. Fuel and Chemical Handling:
1. Store and dispose of chemical wastes in a manner approved by regulatory agencies.
2. Take special measures to prevent chemicals, fuels, oils, oil filters, greases, herbicides, and insecticides from being disposed of, spilled, or entering drainage ways.
3. Do not allow water used in onsite material processing, concrete curing, and other waste waters to enter a drainage way(s) or stream.
4. Spilled material and resulting contaminated soils shall be removed and disposed of in accordance with applicable regulations.
5. Contractor to pay all regulatory and Owner incurred costs resulting from improper discharges and corrective actions.

G. Control of Dust:
1. The control of dust shall mean that no construction activity shall take place without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne so that it remains visible beyond the limits of construction.
   a. Reasonable measures may include paving, frequent road cleaning, planting vegetative groundcover, application of water or application of chemical dust suppressants.
   b. The use of chemical agents such as calcium chloride must be approved by the State of Iowa DOT and Owner.
2. The Engineer will determine the effectiveness of the dust control program and may request the Contractor to provide additional measures, at no additional cost to Owner.
3. Water shall be applied by means of pressurized water truck or similar equipment, equipped with a spray system or hoses with nozzles that will ensure a uniform application of water.
   a. A daily log shall be maintained and provided to MWA each month. The log shall identify the amount of water applied, which roads applied to, and dust additive included.

H. Burning: Do not burn material on the site.

I. Control of Noise:
1. Control noise by fitting equipment with appropriate and properly functioning mufflers.

J. Equipment Maintenance and Decontamination:
1. Waste oils, fuels, lubricants and filters shall be contained and removed from site. Disposal at MCTS is not allowed.
2. Open oil containers exposed to rain shall not be permitted and all spills shall be reported to the Owner immediately.
3. All vehicles and equipment entering the limits of construction and contacting potentially hazardous materials shall be cleaned and/or decontaminated prior to leaving the site. The Contractor shall be responsible for monitoring all vehicle equipment decontamination activity.
4. Decontamination area and fluid management shall be identified in the Contractor’s health and safety plan.
K. Traffic Controls:
   1. Provide all necessary controls, flagmen, signage and warning necessary to prevent impacts to MCTS users, if utilized.
   2. Traffic control plan is subject to Owner’s approval.
   3. Implement all necessary control measures.
   4. Maintain conditions of existing access and haul roads on the site and adjacent facilities such that access is not hindered as the result of construction related activities or deterioration.
      a. Submit traffic control plan where crossing or excavation of existing roads is anticipated, and include services of flagmen as required to coordinate crossings.

L. Completion of Work:
   1. Upon completion of work, leave area in a clean, natural looking condition.
   2. Ensure all signs of temporary construction and activities incidental to construction of required permanent work are removed.

M. Historical Protection: If during the course of construction, evidence of deposits of historical or archeological interest is found, the Contractor shall cease operations affecting the find and shall notify the Owner.
   1. No further disturbance of the deposits shall ensue until the Contractor has been notified by the Owner that Contractor may proceed.
   2. The Owner will issue a notice to proceed after appropriate authorities have surveyed the find and made a determination to the Owner.
   3. Compensation to the Contractor, if any, for lost time or changes in construction resulting from the find, shall be determined in accordance with changed or extra work provisions of the Contract Documents.
   4. The site has been previously investigated and no known history of historical or archeological finds present in the Work areas.

END OF SECTION
SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Temporary utilities including:
      a. Temporary sanitary facilities, including drinking water.
   2. Support facilities including:
      a. Project identification and other temporary signs.
      b. Waste disposal services.
      c. Other construction aids and miscellaneous services and facilities.
   3. Protection including:
      a. Barricades, warning signs, and lights.
      b. Environmental protection.

B. Provide temporary facilities and controls required for construction activities except, if any, for facilities and controls indicated as provided by the Owner.

1.2 UTILITY USE CHARGES

A. Include cost or use charges for temporary facilities in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
   1. Owner's construction forces.
   2. Occupants of Project.
   3. Engineer.
   4. Testing agencies.

B. Pay sewer service use charges for sewer usage (portable toilet), by all parties engaged in construction, at Project site.

1.3 QUALITY ASSURANCE

A. Comply with industry standards and with applicable laws and regulations of authorities having jurisdiction, including but not limited to the following:
   1. Health and safety regulations.
   2. Utility company regulations.
   3. Police, fire department and rescue squad rules.
   4. Environmental protection regulations.
   5. NFPA 241 "Standards for Safeguarding Construction, Alterations and Demolition Operations".
   6. ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition".
   7. NECA Electrical Design Library "Temporary Electrical Facilities", NFPA 70, and NEMA, NECA and UL standards and regulations for temporary electric service.

B. Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.4 PROJECT CONDITIONS

A. At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
B. The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
   1. Keep temporary services and facilities clean and neat.
   2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS
   A. Provide undamaged materials in serviceable conditions and suitable for use intended.

2.2 EQUIPMENT
   A. Provide undamaged equipment in serviceable conditions and suitable for use intended.
   B. Provide temporary self-contained toilet units of temporary single-occupant toilet units of the chemical, aerated recirculation, or combustion type for use by all construction personnel.
      1. Units shall be properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
      2. Units shall be fully secured to avoid tipping or otherwise causing release to the environment.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL
   A. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work.
      1. Relocate and modify facilities as required.
   B. Provide each facility ready for use when needed to avoid delay.
      1. Maintain and modify as required.
      2. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
   C. Temporary Sanitary Facilities:
      1. Provide for toilets, wash facilities and drinking water fixtures in compliance with regulations and health codes for type, number, location, operation and maintenance of fixtures and facilities.
      2. Provide toilet tissue, paper towels, paper cups and similar disposable materials as appropriate for each facility, and provide covered waste containers for used materials.
      3. Install separate self-contained toilet units for male and female personnel shielded to ensure privacy.
      4. Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition.
         a. Dispose of drainage properly.
         b. Supply cleaning compounds appropriate for each condition.
      5. Provide drinking water fountains or containerized tap-dispenser bottled-drinking water units, complete with paper cup supplies.
   D. Storm Water Controls:
      1. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.
      2. Provide erosion control facilities required to prevent eroded soil from leaving the Site.
         a. See Drawings for erosion control features provided by Contractor and existing features provided by Owner.
3. Prevent storm water runoff from construction areas and other designated areas from entering
areas designated to be protected without first passing through an adequately functioning
erosions and sediment control device.
   a. Protect exposed edge of existing cell liners to prevent storm water infiltration and run-on. Protection shall be as described, but not limited to, those measures identified in
   Drawings.
   b. Provide and maintain full time stand-by pumping equipment to remove storm water
   accumulation at the temporary excavations, riser pipes, trenches or other approved
   systems.

3.2 TEMPORARY SUPPORT FACILITIES

   A. Locate field offices, sanitary facilities and other temporary construction and support facilities for
   easy access.

   B. Dewatering Facilities and Drains:
      1. Comply with dewatering requirements of applicable Specification Sections for temporary
         drainage and dewatering facilities and operations not directly associated with construction
         activities.
      2. Where feasible, use same facilities provided for the construction activities.
      3. Maintain site, excavation and construction free of standing water.

   C. Temporary Enclosures:
      1. Provide temporary enclosures when appropriate for protection of construction, in progress
      or completed, from exposure, inclement weather, other construction operations and similar
      conditions.

   D. Project Identification and Other Temporary Signs:
      1. Locate signs where best to inform public and instruct persons seeking entrance to the
      project.
      2. Support signs on posts or framing of steel or preservative-treated wood.
      3. Engage an experienced sign painter to apply graphics.
      4. Prepare and install signs to provide directional information to construction personnel,
         deliveries, and visitors.
      5. Do not permit installation of unauthorized signs.
      6. Fabricate and erect within 10 days following the Notice To Proceed.
      7. Maintained in clean and neat condition throughout construction.
      8. Remove and appropriately disposed of the sign when directed by Owner.

   E. Contractor's Superintendent's Field Office:
      1. Establish at site of Project.
      a. Location subject to Owner's approval.
      2. Assure attendance at this office during the working times.
      3. At this office, maintain complete field file of Shop Drawings, posted Contract Drawings and
         Specifications, and other files of field operations including provisions for maintaining "As
         Recorded Drawings."
      4. Remove field office from site upon acceptance of the entire work by the Owner.

3.3 TEMPORARY PROTECTION FACILITIES

   A. Temporary Fire Protection:
      1. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard
         for Safeguarding Construction, Alterations, and Demolition Operations".
      2. Store combustible materials in containers in fire-safe locations.
      3. Provide supervision of welding operations, combustion-type temporary heating units and
         other sources of fire ignition.

   B. Barricades, Warning Signs, and Lights:
      1. Comply with standards and code requirements for erecting structurally adequate barricades.
2. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard involved.
3. Where appropriate and needed, provide lighting, including flashing red or amber lights.

C. Security Enclosure and Lockup:
1. Install substantial temporary enclosure of partially completed areas of construction.
2. Create and install all enclosures, barricades and structures necessary to prevent access to trenches, fall hazards, excavations, pooled water or similar areas.
3. Provide a secure lockup for valuable stored materials and equipment.
4. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

3.4 OPERATION, TERMINATION, AND REMOVAL

A. Supervision:
1. Enforce strict discipline in use of temporary facilities.
2. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance:
1. Maintain facilities in good operating condition until removal.
2. Protect from damage by freezing temperatures and similar elements.
3. Maintain operation of temporary enclosures, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
4. Prevent water-filled piping from freezing.
5. Maintain markers for underground lines.
6. Protect underground lines from damage during excavation operations.

C. Termination and Removal:
1. Unless the Owner requests that a temporary facility be maintained longer, each temporary facility shall be removed when the need for its service has ended.
2. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility.
3. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
4. Materials and facilities that constitute temporary facilities are the property of the Contractor, except the Owner reserves the right to take possession of project identification signs.

END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

1.2 DEFINITIONS

A. Definitions used in this Section are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.

2. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature that is current as of the date of the Contract Documents.
   b. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed or installed to form a part of the Work.
   c. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.3 MATERIALS - QUALITY ASSURANCE

A. It is the intent of these specifications to procure a quality product of the latest design by an established manufacturer.

   1. All components of systems shall be engineered for long, continuous, uninterrupted service.
   2. The cost of the equipment shall include all royalties and costs arising from patents and licenses associated with furnishing the specified equipment.

B. All materials shall be designed to withstand stresses encountered in continuous operation, fabrication and erection.

C. Material for which no detailed specifications are given shall:

   1. Meet the particular industry standard for the material used.
   2. Meet the specifications of ASTM, ANSI or SAE for metals and plastics as appropriate for the use intended.
   3. Not be used unless it has previously been used for a like purpose for a sufficient length of time in the field or under field-simulated laboratory conditions to demonstrate its successful use.

D. Source Limitations:

   1. To the fullest extent possible, provide products of the same kind from a single source.
   2. When specified products are available only from sources that do not, or cannot, produce a quantity adequate to complete project requirements in a timely manner, consult with the Engineer to determine the most important product qualities to consider before proceeding.
      a. Qualities may include attributes, such as visual appearance, strength, durability, or compatibility.
      b. When a determination has been made, select products from sources producing products that possess these qualities, to the fullest extent possible.
E. Compatibility of Options:
   1. When the Contractor is given the option of selecting between 2 or more products for use on
      the Project, the product selected shall be compatible with products previously selected, even
      if previously selected products were also options.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using
   means and methods that will prevent damage, deterioration, and loss, including theft.
   1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of
      construction spaces.
   2. Coordinate delivery with installation time to assure minimum holding time for items that are
      flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
   3. Provide equipment and personnel to handle products by methods that avoid soiling or
      damage.
   4. Deliver products to the site in an undamaged condition in the manufacturer's original sealed
      container or other packaging system, complete with labels and instructions for handling,
      storing, unpacking, protecting, and installing.
   5. Inspect products upon delivery to ensure compliance with the Contract Documents and to
      ensure that quantities are correct, products are undamaged, and properly protected.
      a. Inform the Engineer or Owner before the inspection occurs, so that they may participate
         in the inspection if so desired.
   6. Store products at the site in a manner that will facilitate inspection and measurement of
      quantity or counting of units.
      a. Seals and labels shall be intact and legible.
   7. Store products in accordance with manufacturer's instructions.
      a. Store heavy materials away from the Project structure in a manner that will not
         endanger the supporting construction.
   8. Store products subject to damage by the elements above ground, under cover in a
      weathertight enclosure, with ventilation adequate to prevent condensation.
      a. Maintain temperature and humidity within range required by manufacturer's
         instructions.
   9. Arrange for fabricated items or products stored outside to be placed on sloped supports
      above the ground.
   10. Items subject to deterioration shall be covered by weather proof sheet covering which is
       ventilated to prevent condensation.
   11. Store loose granular materials on solid surfaces that are well drained and prevent
       contamination by foreign matter.
   12. Stacked items shall be suitably protected from damage by spacers or load distributing
       supports that are safely arranged.
       a. No metalwork (miscellaneous steel shapes and reinforcing steel) shall be stored directly
          on the ground.
       b. Pipe, fittings, and valves may be stored out of doors, but must be placed on wooden
          blocking.
       c. Piping, geosynthetics, and other synthetic-type materials shall be stored off the ground
          on pallets and protected from direct sunlight or as otherwise recommended by
          manufacturers.
   13. Arrange for periodic inspection of stored materials to insure that materials remain
       undamaged and are maintained under required conditions.
   14. All shipment, delivery and storage charges shall be at the expense of the Contractor.
2.1 PRODUCT SELECTION

A. General Product Requirements:
   1. Provide products that comply with the Contract Documents, that are undamaged and, unless
      otherwise indicated, new at the time of installation.
   2. Provide products complete with accessories, trim, finish, safety guards, and other devices
      and details needed for a complete installation and the intended use and effect.

B. Standard Products:
   1. Where available, provide standard products of types that have been produced and used
      successfully in similar situations on other projects.

C. Product Selection Procedures:
   1. The Contract Documents and governing regulations govern product selection. Procedures
      governing product selection include the following:
      a. Proprietary Specification Requirements:
         1) Where Specifications name only a single “Proprietary” product or manufacturer,
            provide the product indicated.
         2) No “or-equals” will be permitted.
      b. Where Specifications name one or more products or manufacturers:
         1) Comply with the Contract Document provisions concerning “or-equals”.
      c. Descriptive Specification Requirements:
         1) Where Specifications describe a product or assembly, listing exact characteristics
            required, with or without use of a brand or trade name, provide a product or
            assembly that provides the listed characteristics and otherwise complies with
            Contract Documents.
      d. Performance Specification Requirements:
         1) Where Specifications require compliance with performance requirements, provide
            products that comply with listed requirements and are recommended by the
            manufacturer for the application indicated.
         2) Manufacturer's recommendations may be contained in published product literature
            or by the manufacturer's certification of performance.
      e. Compliance with Standards, Codes, and Regulations:
         1) Where Specifications only require compliance with an imposed code, standard, or
            regulation, select a product that complies with the standards, codes, or regulations
            specified.
      f. Visual Matching:
         1) Where Specifications require matching an established Sample, the Engineer's
            decision will be final on whether a proposed product matches satisfactorily.
         2) Where no product available within the specified category matches satisfactorily
            and complies with other specified requirements, comply with provisions of the
            Contract Documents concerning "or-Equal" for selection of a matching product in
            another product category.
      g. Visual Selection:
         1) Where specified product requirements include the phrase "... as selected from
            manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a
            product and manufacturer that complies with other specified requirements.
         2) The Engineer will select the color, pattern, and texture from the product line
            selected.
PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located, and aligned with other Work.
   1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

3.2 FIELD QUALITY CONTROL

A. Inspect Deliveries:
   1. Inspect all products or equipment delivered to the site prior to unloading.
   2. Reject all products or equipment that are damaged, used, or in any other way unsatisfactory for use on Project.

B. Qualifications of Manufacturer’s Field Personnel:
   1. Personnel shall be authorized by the manufacturer to erect, start-up and initiate warranty of the Product provided.
      a. Personnel shall come to the site with the required tools and instruments.
      b. Personnel shall have full knowledge of Product to be furnished.
   2. Failure to provide personnel with full qualifications shall be cause for service trip to be disqualified as part of the requirements and may be cause for reimbursement for costs incurred by the Owner due to services required for a qualified start-up inspection.

END OF SECTION
SECTION 01 71 23
FIELD ENGINEERING

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Engineering surveys provided by the Owner’s Representative or Quality Assurance Consultant.
   2. Engineering surveys provided by the Contractor.
   3. Profile and topography shown on the Drawings.
   4. Record measurements and markers.

1.2 SUBMITTALS
A. Provide record measurements of facilities, roads, surfacing, utilities, and structures (i.e. buildings, fencing, bollards, fuel island components, etc.), as installed.

PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION

3.1 PREPARATION
A. Investigate and verify the existence and location of site improvements, utilities, and other existing facilities.
B. Before construction, verify the location of invert elevations at points of connection of storm sewer, fuel piping, and underground electrical, or communications services.
C. Furnish information to the Engineer and the appropriate utility regarding conflicts that are necessary to adjust, move, or relocate existing utility structures, lines, services, or other utility appurtenances located in or affected by construction.
D. Provide the Owner’s representative two working days advance notification when ready for engineering surveys.

3.2 ENGINEERING SURVEYS PROVIDED BY THE OWNER'S REPRESENTATIVE
A. Prior to the start of construction, Owner will be responsible to establish or verify benchmarks for construction, at the locations shown on the Drawings or in the general vicinity of the Work.
B. Prior to start of construction, Owner will be responsible to undertake surveys or estimates required to establish basis of Unit Price Work, if necessary.
C. Quality Assurance surveys as Owner deems necessary to document compliance.

3.3 ENGINEERING SURVEYS TO BE PROVIDED BY THE CONTRACTOR
A. General:
   1. Provide, locate, preserve and protect established construction reference stakes, benchmarks and control points.
   2. Locate, preserve and protect property corners and section corner monuments.
      a. If moved or destroyed due to Contractor activities, then replace in accordance with applicable regulations or requirements.
   3. Provide additional construction staking as necessary to layout and complete construction.
4. Before beginning construction staking, verify the information shown on the Drawings or provided by the Owner’s Representative, in relation to the established construction reference stakes, bench marks, control points and property corners.
   a. Notify the Engineer of any discrepancies.
5. Remove Contractor installed construction reference stakes when directed by the Engineer.

B. Structural Fill, Controlled Fill, and Embankments:
1. Provide any intermediate construction reference points required to verify installation at the line and grade established and locate appurtenant structures.

C. Site Improvements and Buildings:
1. Provide construction reference stakes for site improvements including pavements (including interior to MCTS), pavements, roadways, grading, fill and topsoil placement, and utility line and grades.
2. Provide construction reference stakes for location and elevations of structures, foundations, column grids, floor levels, electrical facilities, and mechanical facilities.

3.4 PROFILE AND TOPOGRAPHY SHOWN ON THE DRAWINGS
A. Contours, profiles, or points of the ground and MCTS tipping floor are shown on the Drawings.
   1. These profiles and contours are reasonably correct, but are not guaranteed to be absolutely so, and together with any schedule of quantities are presented only as an approximation.
   2. See also notes on Drawings for features not in contours or profiles.

3.5 RECORD MEASUREMENTS AND MARKERS
A. Provide record survey information of the as-constructed facilities showing the exact horizontal and vertical location of drain lines, storm water lines, buried utilities, structures, stabilization measures, and other facilities that are covered when construction is complete.

B. Contractor shall provide Owner the as-constructed survey contours conforming to the project coordinate system identified on the Contract Drawings in AutoCAD (DWG) release 2014 compatible x, y, z format, as well as DWF format and digital terrain model (DTM).

C. Record drawings shall include information based on field surveys (x, y, z) for the following improvements, at a minimum:
   1. Limits of excavation for subgrade and components.
   2. Elevation contours for the completed area(s), including information above.
   3. Provide construction coordinates for drainage structures or layers (where required to be installed) at finished grades at a minimum of 100 FT intervals, at all changes in grades and at coordinate points shown on the Drawings.
   4. Berm alignment.
   5. Elevations and horizontal locations for all piping, drains, cleanouts, risers, , and structures (where required to be installed), including where piping changes in vertical and/or horizontal direction or elevation occur.
   6. Provide tipping Floor post pour survey for the entire MCTS interior at approximately 5 FT intervals and at all control points.
   7. Erosion/sedimentation control systems.
   8. Limits of pavement including vertical and horizontal locations for all curbs, inlets, manholes, and other pavement related improvements (where required to be installed).
   9. Other improvements related to the Work as shown on the Drawings.

END OF SECTION
SECTION 01 73 20
OPENINGS AND PENETRATIONS IN CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Methods of installing and sealing openings and penetrations in construction.

B. Related Specification Sections include but are not necessarily limited to:
   1. Division 00 - Procurement and Contracting Requirements.
   2. Division 01 - General Requirements.
   3. Section 03 09 00 Concrete.

1.2 QUALITY ASSURANCE
A. Referenced Standards:
   1. American Concrete Institute (ACI):
      a. 318, Building Code Requirements for Structural Concrete.
   2. ASTM International (ASTM):
      e. A351, Standard Specification for Castings, Austenitic, for Pressure-Containing Parts.
      g. A653, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
      h. A666, Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
      i. A995, Castings, Austenitic-Ferritic (Duplex) Stainless Steel, for Pressure-Containing Parts.
      a. 70, National Electrical Code (NEC):
         1) Article 501, Class I Locations.

1.3 DEFINITIONS
A. Hazardous Areas: Areas shown in the Contract Documents as having Class I or Class II area classifications.

1.4 SUBMITTALS
A. Shop Drawings:
   1. See Specification Section 01 33 00 for requirements for the mechanics and administration of the submittal process.
   2. For each structure provide dimensioned or scaled (minimum 1/8 IN = 1 FT) plan view drawings containing the following information:
      a. Vertical and horizontal location of all required openings and penetrations.
      b. Size of all openings and penetrations.
      c. Opening type.
      d. Seal type.
   3. Manufacturer's installation instructions for standard manufactured products.
1.5 PROJECT CONDITIONS

A. Water table level: See Geotechnical Investigation Report as provided in the Contract Documents.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe Sleeves:
   1. All Areas:
      a. Steel, Hot-dipped galvanized after fabrication.
      b. Penetrations 24 IN DIA or less: ASTM A53, Schedule 40.
      c. Penetrations larger than 24 IN DIA: ASTM A36, Minimum 1/4 IN thickness.

PART 3 - EXECUTION

3.1 FABRICATION

A. Provide waterstop plate/anchor flange for piping, ducts, castings and sleeves cast-in-place in concrete.
   1. For fabricated units, weld plate to sleeve, pipe, or ductwork.
   2. For commercial castings, cast water stop/anchor with wall pipe.
   3. Plate is to be same thickness as sleeve, pipe, casting or ductwork.
   4. For fabricated units, diameter of plate or flange to be 4 IN larger than outside diameter of sleeve, pipe or ductwork.
   5. For commercial castings, waterstop/anchor size to be manufacturer standard.
   6. Provide continuous around entire circumference of sleeve, pipe, or ductwork.

3.2 INSTALLATION AND APPLICATION

A. Obtain prior approval from Engineer when any opening larger than 100 SQ IN must be made in existing or newly completed construction.
B. Perform electrical penetrations in hazardous areas in accordance with NFPA 70, Article 501.
C. Install sleeves and castings in accordance with ACI 318, Chapter #6.
D. When mechanical or electrical work cannot be installed as structure is being erected, provide and arrange for building-in of boxes, sleeves, insets, fixtures or devices necessary to permit installation later.
   1. Lay out chases, holes or other openings which must be provided in concrete or other work.
E. Where pipes, conduits or ducts pass through floors in non-washdown areas, install sleeves with ends flush with finished surfaces.
F. Size sleeves, blockouts and cutouts which will receive sealant seal such that free area to receive sealant is minimized and seal integrity may be obtained.
G. Do not cut into or core drill any beams, joists, or columns.
H. Do not install sleeves in beams, joists, or columns.
I. Do not install recesses in beams, joists, columns, or slabs.
J. Field Cutting and Coring:
   1. Saw or core drill with non-impact type equipment.
   2. Mark opening and drill small 3/4 IN or less holes through structure following opening outline.
   3. Sawcut opening outline on both surfaces.
      a. Knock out within sawcuits using impact type equipment.
      b. Do not chip or spall face of surface to remain intact.
c. Do not allow any overcut with saw kerf.

K. Where alterations are necessary, restore adjacent surfaces to their condition existing prior to start of work.

L. For interior wall applications where backer rod and sealant are specified, provide backer rod and sealant at each side of wall.

M. Use full depth expanding foam sealant for seal applications where single or multiple pipes, conduits, etc., pass through a single sleeve.

N. Backer Rod and Sealant:
   1. Provide backer rod and sealant for modular mechanical seal applications.
      a. Apply on top side of slab penetrations and on interior, dry side wall penetrations.

3.3 SCHEDULES

A. General Schedule of Penetrations through Floors, Foundation Base Slabs, Foundation Walls, Foundation Footings, Partitions and Walls for Ductwork, Piping, and Conduit:
   1. Provide the following opening and penetration types:
      a. Type A - Block out 2 IN larger than outside dimensions of duct, pipe, or conduits.
      b. Type B - Saw cut or line-drill opening. Place new concrete with integrally cast sheet metal or pipe sleeve.
      c. Type C - Fabricated sheet metal sleeve or pipe sleeve cast-in-place. Provide pipe sleeve with water ring for wet and/or washdown areas.
      d. Type D - Commercial type casting or fabrication.
      e. Type F - Integrally cast pipe, duct or conduit.
      f. Type G - Saw cut or line-drill and remove area 1 IN larger than outside dimensions of duct, pipe or conduit.
      g. Type H - Core drill.
      h. Type I - Block out area. At later date, place new concrete with integrally cast sheet metal or pipe sleeve.
   2. Provide seals of material and method described as follows.
      a. Category 4 - Backer rod and sealant.
      b. Category 5 - Full depth compressible sealant with escutcheons on both sides of opening.
      c. Category 6 - Full depth compressible sealant and flanges on both sides of opening. Flanges constructed of same material as duct, fastened to duct and minimum 1/2 IN larger than opening.
      d. Category 7 - Full depth compressible sealant and finish sealant or full depth expanding foam sealant depending on application.
   3. Furnish openings and sealing materials through new floors, partitions and walls in accordance with Schedule A, Openings and Penetrations for New Construction.
   4. Furnish openings and sealing materials through existing floors, partitions and walls in accordance with Schedule B, Openings and Penetrations for Existing Construction.
<table>
<thead>
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<th>APPLICATIONS</th>
<th>DUCTS</th>
<th>PIPING</th>
<th>CONDUIT</th>
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<td>SEAL CATEGORY</td>
<td>OPENING TYPE</td>
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<td>Through floors on grade above water table</td>
<td>C F</td>
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<td>7</td>
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<tr>
<td>Through exterior wall below grade above water table</td>
<td>C D</td>
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<td>Through exterior wall above grade</td>
<td>A B C 6 6 6</td>
<td>A B D H (2) 5 5 Not Req 5</td>
<td>C H (2)</td>
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</table>

### SCHEDULE B. OPENINGS AND PENETRATIONS SCHEDULE
FOR EXISTING CONSTRUCTION

<table>
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<th>APPLICATIONS</th>
<th>PIPING</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>OPENING TYPE</td>
<td>SEAL CATEGORY</td>
</tr>
<tr>
<td>Through exterior wall above grade</td>
<td>G H (1)(3)</td>
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</tr>
</tbody>
</table>

(1) Multiple piping 3 IN and smaller or multiple conduits.
(2) Single pipe 3 IN and smaller or single conduit.
(3) Single pipe or conduit larger than 3 IN.

END OF SECTION
PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Demolition, cutting and patching of existing construction where shown on Drawings, or as
      required to accommodate new work shown or specified.
   2. Removal and protection of items identified to be saved or reused.

B. Related Specification Sections include but are not necessarily limited to:
   1. Division 00 - Procurement and Contracting Requirements.
   2. Division 01 - General Requirements.
   3. Section 03 09 00 – Concrete.

1.2 SUBMITTALS

A. Shop Drawings:
   1. See Specification Section 01 33 00 for requirements for the mechanics and administration of
      the submittal process.
   2. Provide documentation of demolition and removal. Indicate limits and sequencing to be
      used. Show and identify any items to be kept for Owner reuse or retention.
   3. Provide schedule of demolition activities including overall schedule, planned utility
      interruptions, interruptions of Owner/Using Agency services and traffic control if required.
   4. Indicating manufacturer and type of:
      a. Proposed nonshrink grout.
      b. Epoxy bonding adhesive.
      c. Proposed materials and methods to be used for matching and repairing existing
         construction.

1.3 DELIVERY, STORAGE, AND HANDLING

A. General:
   1. Salvage items, designated for Owner's salvage, as a functional unit.
   2. Clean, list and tag for storage/reuse.
   3. Protect from damage and deliver to location designated.
   4. Salvage each item with auxiliary or associated equipment required for operation.

1.4 PROJECT CONDITIONS

A. Perform preliminary investigations as required to ascertain extent of work.

1.5 SEQUENCING AND SCHEDULING

A. Coordinate and reschedule work as required to preclude interference with other operations.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following products and manufacturers
   are acceptable:
   1. Epoxy bonding adhesive:
      a. Euco No.452 MV by Euclid Chemical Co.
      b. Sikadur 32, Hi-Mod by Sika Corporation.
2. Epoxy patch:
   a. Depth of patch:
      2) Between 1/8 IN and 3/4 IN: Five Star Fluid Epoxy.

B. Submit request for substitution in accordance with Specification Section 01 25 13.

2.2 MATERIALS

A. Temporary Partitions:
   1. Plywood: 1/2 IN minimum for interior or exterior use.
   2. Paneling: 1/4 IN minimum for interior use.

B. Nonshrink Grout: See Section 03 09 00.

C. Epoxy Bonding Adhesive:
   1. Two component, moisture insensitive adhesive manufactured for the purpose of bonding fresh concrete to hardened concrete.

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide and maintain covered passageways where necessary to ensure safe passage of persons in or near areas of work.

B. Provide and maintain substantial barricades and safety lights as required.

C. Provide and maintain temporary dustproof partitions where necessary.

D. Provide and maintain temporary weather protection as necessary.

E. Provide adequate temporary bracing to maintain safety, stability and to resist all loads to which the structure may be subjected.

3.2 DEMOLITION

A. Cutting and Removal:
   1. Remove existing work indicated to be removed, or as necessary for installation of new work.
   2. Neatly cut and remove materials, and prepare all openings to receive new work.
   3. Remove masonry or concrete in small sections.

B. Modification of Existing Concrete:
   1. Where indicated, remove existing concrete.
      a. Make openings by sawing through the existing concrete.
         1) Core drill with 6 IN DIA core at the corners of rectangular openings to avoid overcutting at corners.
      b. Break out concrete after initial saw cuts in the event concrete thickness prevents cutting through.
      c. Where saw cutting is not possible, make openings by drilling holes around perimeter of opening and then chipping out the concrete.
         1) Holes shall be sufficient in number to prevent damage to remaining concrete.
   2. Oversize required openings in existing concrete 1 IN on all sides and build back to required opening size by means of nonshrink grout epoxy bonded to the existing concrete.
   3. Where oversized openings cannot be made, remove the concrete to the required opening size and cut back exposed reinforcing 1 IN from face of concrete and fill resulting holes with nonshrink grout.
   4. Protect remaining concrete from damage.
      a. If existing concrete to remain becomes damaged, cease demolition and make corrections as required to avoid further damage.
      b. Notify Engineer immediately of any damage to remaining concrete.
C. Removal of Existing Anchor Bolts or Other Protruding Elements:
   1. Remove all protruding elements.
   2. Remove to a depth of 1/4 IN from finished surface.
   3. Fill void with epoxy patch.

D. Matching and Patching:
   1. Walls, ceilings, floors or partitions:
      a. Repair abutting walls, ceilings, floors or partitions disturbed by removal.
      b. Match and patch existing construction disturbed during installation of new work.
   2. Methods and materials:
      a. Similar in appearance, and equal in quality to adjacent areas for areas or surfaces being repaired.
      b. Subject to review of Owner.
   3. Reinforcing steel that is cut and exposed:
      a. Remove to a depth of 2 IN.
      b. Fill void with epoxy patch.

E. Salvaged Items:
   1. Thoroughly dry and clean all metal surfaces.
   2. Dispose of items or materials not designated for Owner's salvage or reuse.
      a. Promptly remove from site.
   3. Do not store or sell Contractor salvaged items or materials on-site.
   4. Carefully remove items to be salvaged and reused or to be delivered to Owner's storage.
      a. Store and protect items indicated on Drawings or those which have been marked by Owner to be salvaged or to be reused in Work.
      b. Replace any item damaged through carelessness in removal, storage, or handling with new items of same type.
      c. Do not reuse materials or equipment not specifically indicated or specified to be reused.

F. Clean Up: Transport debris and legally dispose of off-site.

END OF SECTION
SECTION 01 77 01
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Substantial Completion.
   2. Final Completion.
   3. Project Record Documents.
   4. Warranties.
   5. Instruction of Owner's personnel.
   6. Final Cleaning.

1.2 SUBSTANTIAL COMPLETION

A. Before notifying Owner and Engineer that the Work is Substantially Complete, undertake the following:
   1. Demonstrate to the Engineer that systems and system components operate as intended.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents, as appropriate.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Prepare and submit Project Record Documents, Engineering Surveys and Record Measurements and Markers as required by Section 01 71 23, and similar final record information.
   6. Deliver any specified tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   7. Advise Owner's personnel of changeover in security provisions.
   8. Complete startup testing of systems.
      a. Coordinate and conduct an operating test of the completed systems and components of their work under normal full operating conditions of use.
      b. Make adjustments and replacements necessary to bring all work into compliance with the Contract Documents; all applicable codes, regulations and laws; and system manufacturer requirements.
      c. Operating systems and equipment shall be adjusted to provide smooth, unhindered operation satisfactory to the Owner.
   10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
   11. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   12. Complete final cleaning requirements, including touchup painting, including a thorough cleaning, of all work as appropriate to remove all foreign matter, spots, stains, and soil so as to put all work in a complete and finished condition.
   13. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
   14. Cleaning and touch up shall be repeated as necessary until final completion of all punch list items.
15. Exterior cleaning shall include washing down and sweeping of all paved areas and removal of all trash and debris from the site.

B. After Owner acceptance, costs incurred by the Owner for cleaning attributable to work of the Contract will be charged to the Contractor.

C. Submit written notification to Owner and Engineer that the entire Work is ready for its intended use and the entire Work is substantially complete.
   1. If the items in Paragraph A. above are complete, then within 14 days Owner, Contractor and Engineer will make an inspection of the Work to determine status of completion.
   2. If Engineer considers the Work substantially complete, then Engineer will prepare and deliver to the Owner a tentative Certificate of Substantial Completion fixing the date of Substantial Completion with an attached tentative list of items to be completed or corrected before final payment.
   3. Engineer will issue a definitive Certificate of Substantial Completion with list of items to be completed or corrected or notify Contractor that the Work is not substantially complete within 21 days after submittal to Owner.
   4. The Contractor shall request reinspection when the Work identified in previous inspections as incomplete or corrected.
   5. Results of completed inspection will form the basis of requirements for Final Completion.
   6. Costs associated with reinspections by the Engineer due to the work not meeting Substantial Completion requirements after Contractor notification shall be charged to the Contractor.
      a. See Supplementary Condition SC15.03.B.

1.3 FINAL COMPLETION

A. Preliminary Procedures:
   1. Before requesting final inspection for certification of final payment, complete the following:
      a. Submit a list of items identified as requiring correction or completion.
         1) List exceptions in the request.
      b. Instruct Owner’s personnel in operation, adjustment and maintenance of products, equipment and systems in accordance with the Contract Document requirements.
      c. Submit the final payment request with releases and supporting documentation not previously submitted and accepted.
         1) Include insurance certificates for products and completed operations where required.
      d. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
      e. Submit a written notice that the work is complete including a certified copy of the Engineer’s final inspection list of items to be completed or corrected, endorsed and dated by the Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Engineer.
         1) On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements.
      f. Submit consent of surety to final payment.
      g. Submit a final liquidated damages settlement statement.
      h. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
      i. Submit Project Record Documents, Record Measurements and Markers, Drawings, Project Manual, Operation and Maintenance Manuals, product test data and similar final record information.
      j. Deliver tools, spare parts, extra stock and similar items.

B. Reinspection Procedure:
   1. The Engineer will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Owner and Engineer.
2. Upon completion of reinspection, the Engineer will prepare a certificate of final acceptance. If the work is incomplete, the Engineer will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

3. If necessary, reinspection will be repeated.
   a. Costs associated with reinspections by the Engineer due to the work not meeting Final Completion requirements, after Contractor notification, shall be charged to the Contractor.
   b. See Supplementary Condition SC15.03.B.

1.4 PROJECT RECORD DOCUMENTS

A. General:
1. Do not use Record Documents for construction purposes.
2. Protect Record Documents from deterioration and loss in a secure, fire-resistant location.
3. Provide access to Record Documents for Engineer’s reference during normal working hours.
4. See Section 01 71 23.

B. Record Drawings:
1. Furnish a complete set of Construction Document Drawings to be utilized by Contractor and all Subcontractors for recording all changes and variations from the Original Drawings and Shop Drawings.
   a. Mark the set to show the actual installation where the installation varies from the work as originally shown.
   b. Mark which drawing is most capable of showing conditions fully and accurately.
   c. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings.
      1) Give particular attention to concealed elements that would be difficult to measure and record at a later date.
   2. Mark record sets with red erasable pencil.
      a. Use other colors to distinguish between variations in separate categories of the work.
   3. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
   4. Note related Change Order numbers where applicable.
   5. Organize Record Drawing sheets into manageable sets.
      a. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
   6. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
   7. Identify and date each Record Drawing; include designation “PROJECT RECORD DRAWING” in a prominent location.
   8. Upon completion of the Work submit Record Drawings to the Engineer for the Owner’s records.

C. Record Specifications:
1. Furnish a copy of the Project Manual for recording changes.
   a. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modification.
   b. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
   c. Note related Record Drawing information and product data.
   d. Identify and date Record Specification; include “PRODUCT RECORD SPECIFICATION” in a prominent location.
   e. Upon completion of the work, submit record specifications to the Engineer for the Owner’s records.
D. Record Product Data: Furnish one copy of each product data submittal. Note related Change Orders and markup of Record Drawings and Record Specifications.
   1. Mark these documents to show significant variations in actual work performed in comparison with information submitted.
      a. Include variations in products delivered to the site and from the manufacturer’s installation instructions and recommendations.
   2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
   3. Upon completion of markup, submit complete set of Record Product Data to the Engineer for the Owner’s records.

E. Record Sample Submitted:
   1. Immediately prior to Substantial Completion, the Contractor shall meet with the Engineer and the Owner’s personnel at the project site to determine which samples are to be transmitted to the Owner for record purposes.
   2. Comply with the Owner’s instructions regarding delivery to the Owner’s sample storage area.

F. Miscellaneous Record Submittals:
   1. Refer to individual specification sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work.
   2. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order.
   3. Identify miscellaneous records properly and bind or file, ready for continued use and reference.
   4. Submit to the Engineer for the Owner’s records.

1.5 WARRANTIES

A. Submit written warranties for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Submit properly executed warranties of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
   1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 1/2 by 11 IN (115-mm by-280-mm) paper.
   2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty.
      a. Mark tab to identify the product or installation.
      b. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
   3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS (NOT APPLICABLE TO THIS SPECIFICATION SECTION)
PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General:

1. Conduct final cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning:

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean.
   c. Remove petrochemical spills, stains, and other foreign deposits.
   d. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   e. Remove tools, construction equipment, machinery, and surplus material from Project site.
   f. Remove all sediment from erosion control structures.
   g. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
   h. Remove debris and surface dust from limited access spaces, including vaults, manholes, pipes, and similar spaces.
   i. Sweep concrete floors broom clean in unoccupied spaces.
   j. Remove labels that are not permanent.
   k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces.
      1) Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
      2) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
   l. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
   m. Replace parts subject to unusual operating conditions.
   n. Leave Project clean and ready for occupancy.

C. Comply with Safety Standards for Cleaning:

1. Do not discharge volatile, harmful, or dangerous materials on the site.
2. Properly and lawfully dispose of waste materials from Project site.

END OF SECTION
SECTION 03 09 00
CONCRETE

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes: Cast-in-place concrete and grout.
B. Related Specification Sections include but are not necessarily limited to:
   1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
   2. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE
A. Referenced Standards:
   1. American Concrete Institute (ACI):
      a. CT-13, ACI Concrete Terminology.
      b. 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass
         Concrete.
      c. 212.3R, Chemical Admixtures for Concrete.
      d. 304R, Guide for Measuring, Mixing, Transporting, and Placing Concrete.
      e. 304.2R, Placing Concrete by Pumping Methods.
      f. 305R, Hot Weather Concreting.
      g. 306R, Cold Weather Concreting.
      h. 318, Building Code Requirements for Structural Concrete.
      i. 347, Guide to Formwork for Concrete.
   2. ASTM International (ASTM):
      c. C39, Standard Test Method for Compressive Strength of Cylindrical Concrete
         Specimens.
      e. C131, Standard Test Method for Resistance to Degradation of Small-size Coarse
         Aggregate by Abrasion and Impact in the Los Angeles Machine.
      f. C138, Standard Method of Test for Density (Unit Weight), Yield, and Air Content
         (Gravimetric) of Concrete.
      i. C157, Standard Test Method for Length Change of Hardened Hydraulic-Cement,
         Mortar, and Concrete.
      j. C172, Standard Practice for Sampling Freshly Mixed Concrete.
      k. C173, Standard Test Method for Air Content of Freshly Mixed Concrete by the
         Volumetric Method.
      l. C231, Standard Test Method for Air Content of Freshly Mixed Concrete by the
         Pressure Method.
      n. C289, Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates
         (Chemical Method).
      o. C309, Standard Specification for Liquid Membrane-Forming Compounds for Curing
         Concrete.
q. C618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.


3. National Ready Mixed Concrete Association (NRMCA).

B. Quality Control:

1. Concrete testing agency:
   a. Contractor to employ and pay for services of a testing laboratory to:
      1) Perform materials evaluation.
      2) Design concrete mixes.
   b. Concrete testing agency to meet requirements of ASTM E329.

2. Do not begin concrete production until proposed concrete mix design has been approved by Engineer.
   a. Approval of concrete mix design by Engineer does not relieve Contractor of his responsibility to provide concrete that meets the requirements of this Specification.

3. Adjust concrete mix designs when material characteristics, job conditions, weather, strength test results or other circumstances warrant, and as approved by Engineer.
   a. Do not use revised concrete mixes until submitted to and approved by Engineer.

4. Perform structural calculations as required to prove that all portions of the structure in combination with remaining forming and shoring system has sufficient strength to safely support its own weight plus the loads placed thereon.

C. Qualifications:

1. Ready mixed concrete batch plant certified by NRMCA.

2. Formwork, shoring and reshoring for slabs and beams except where cast on ground to be designed by a Professional Engineer currently registered in the state where the Project is located.

3. Contractor Qualifications:
   a. Minimum five previously successful projects in last five years.

1.3 DEFINITIONS

A. Per ACI CT-13 except as modified herein:


2. Concrete Testing Agency: Testing agency employed to perform materials evaluation, design of concrete mixes or testing of concrete placed during construction.

3. Exposed concrete: Exposed to view after construction is complete.


5. Lean concrete: Concrete with low cement content.

6. Nonexposed concrete: Not exposed to view after construction is complete.


8. Specified strength: Specified compressive strength at 28 days.

9. Submitted: Submitted to Engineer.

1.4 SUBMITTALS

A. Shop Drawings:

1. See Specification Section 01 33 00 for requirements for the mechanics and administration of the submittal process.

2. Concrete mix designs proposed for use.
   a. Concrete mix design submittal to include the following information:
      1) Sieve analysis and source of fine and coarse aggregates.
      2) Test for aggregate organic impurities.
      3) Test for deleterious aggregate per ASTM C289.
4) Proportioning of all materials.
5) Type of cement with mill certificate for cement.
6) Type of fly ash with certificate of conformance to specification requirements.
7) Slump.
8) Air content.
9) Aggregate specific gravity and loss of abrasion as defined herein.
10) Brand, type, ASTM designation, and quantity of each admixture proposed for use.
11) 28-day cylinder compressive test results of trial mixes per ACI 318 and as indicated herein.
12) Certification from quarry or material supplier for large aggregate product meeting specific gravity and loss or abrasive requirements.

3. Certifications:
   a. Standard deviation value in psi for ready mix plant supplying the concrete.
   b. That the pozzolan meets the quality requirements stated in the Section, and supplier’s certified test reports for each shipment of pozzolan delivered to concrete suppliers.
   c. That the class of coarse aggregate meets the requirements of ASTM C33 for type and location of concrete construction.
   d. Of aggregate gradation and impurities.

4. Test reports:
   a. Cement and pozzolan mill reports for all materials to be supplied.

5. Product technical data including:
   a. Acknowledgement that products submitted meet requirements of standards referenced.
   b. Manufacturer's installation instructions.
   c. Manufacturers and types:
      1) Joint fillers.
      2) Curing agents.
      3) Chemical sealer.
      4) Bonding and patching mortar.
      5) Construction joint bonding adhesive.
      6) Nonshrink grout with cure/seal compound.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Storage of Material:
   1. Cement and fly ash:
      a. Store in moistureproof, weathertight enclosures.
      b. Do not use if caked or lumpy.
   2. Aggregate:
      a. Store to prevent segregation and contamination with other sizes or foreign materials.
      b. Obtain samples for testing from aggregates at point of batching.
      c. Do not use frozen or partially frozen aggregates.
      d. Do not use bottom 6 IN of stockpiles in contact with ground.
      e. Allow sand to drain until moisture content is uniform prior to use.
   3. Admixtures:
      a. Protect from contamination, evaporation, freezing, or damage.
      b. Maintain within temperature range recommended by manufacturer.
      c. Completely mix solutions and suspensions prior to use.

B. Delivery:
   1. Concrete:
      a. Prepare a delivery ticket for each load for ready-mixed concrete.
      b. Truck operator shall hand ticket to Owner's Representative at the time of delivery.
      c. Ticket to show:
         1) Mix identification mark.
         2) Quantity delivered.
         3) Amount of each material in batch.
         4) Outdoor temp in the shade.
5) Time at which cement was added.
6) Numerical sequence of the delivery.
7) Amount of water added.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following products and manufacturers are acceptable:

1. Nonshrink, nonmetallic grout:
   a. Sika "SikaGrout 212."
   b. Euclid Chemical "NS Grout."
   c. BASF Admixtures, Inc. "Masterflow 713."

2. Epoxy grout:
   a. BASF Admixtures, Inc. "Brutem MPG."
   b. Euclid Chemical Company, "E3-G."
   c. Fosroc, "Conbextra EPHF."

3. Bonding agent:
   a. Euclid Chemical Co.
   b. BASF Admixtures, Inc.
   c. L&M Construction Chemicals Inc.

B. Submit request for substitution in accordance with Specification Section 01 25 13.

2.2 MATERIALS

A. Portland Cement: Conform to ASTM C150 Type I/II or III.

B. Fly Ash:
   1. ASTM C618, Class F or Class C.
   2. Nonstaining.
      a. Hardened concrete containing fly ash to be uniform light gray color.
   3. Maximum loss on ignition: 4 PCT.
   4. Compatible with other concrete ingredients.
   5. Obtain proposed fly ash from a source approved by the State Highway Department in the state where the Project is located for use in concrete for bridges.

C. Admixtures:
   2. Water reducing, retarding, and accelerating admixtures:
      a. ASTM C494 Type A through E.
      b. Conform to provisions of ACI 212.3R.
      c. Do not use retarding or accelerating admixtures unless specifically approved in writing by Engineer and at no cost to Owner.
      d. Follow manufacturer's instructions.
      e. Use chloride free admixtures only.
   3. Maximum total water soluble chloride ion content contributed from all ingredients of concrete including water, aggregates, cementitious materials and admixtures by weight percent of cement:
      a. 0.10 All concrete.
   4. Do not use calcium chloride.
   5. Pozzolanic admixtures: ASTM C618.
   6. Provide admixtures of same type, manufacturer and quantity as used in establishing required concrete proportions in the mix design.

D. Water: Potable, clean, free of oils, acids and organic matter.
E. Aggregates for Normal Weight Concrete:
2. Fine and coarse aggregates to be regarded as separate ingredients.
3. Fine aggregates to be natural, not manufactured.
4. Coarse aggregate sieve analysis unless otherwise noted:
   a. Concrete specified at 6000 PSI shall utilize rock coarse aggregate, ASTM C33 Size
      number 57 (1/2 IN), complying with the following:
         1) Specific gravity: 2.80 (minimum) for bulk SSD condition.
         2) Maximum 14.0 PCT abrasion loss according to ASTM C131, Grading B.
5. The Contractor is required to provide a concrete mix for the tipping floor repair that has a
   large aggregate material with the characteristics noted above. The concrete supplier shall
   locate, acquire and maintain enough large aggregate material required for the completion of
   the tipping floor repair. Contractor shall provide certification of the material characteristics
   as part of the mix design submittal for review and approval by the Engineer.
6. Provide aggregates approved for bridge construction by Iowa Department of Transportation.

F. Synthetic Fibers:
2. 100 PCT virgin polypropylene, fibrillated fibers containing no reprocessed olefin materials
   and specifically manufactured for use in concrete.
3. Physical Characteristics:
   a. Specific gravity: 0.91.
   b. Modulus of Elasticity: 500 ksi.
   c. Tensile Strength: 55 ksi.
   d. Fiber length: 3/4 IN.

G. Concrete Grout:
1. Nonshrink, nonmetallic grout:
   a. Nonmetallic, noncorrosive, nonstaining, premixed with only water to be added.
   b. Grout to produce a positive but controlled expansion.
   c. Mass expansion not to be created by gas liberation.
   d. Minimum compressive strength of nonshrink grout at 28 days: 6500 PSI.
   e. In accordance with COE CRD-C621.
2. Epoxy grout:
   a. 3-component epoxy resin system.
      1) Two liquid epoxy components.
      2) One inert aggregate filler component.
   b. Each component packaged separately for mixing at jobsite.

H. Membrane Curing Compound:
1. ASTM C309, Type I-D.
2. Resin based, dissipates upon exposure to UV light.
3. Curing compound shall not prevent bonding of any future coverings, coatings or finishes.
4. Curing compounds used in water treatment plant construction to be nontoxic and taste and
   odor free.

I. Bonding Agent:
1. High solids acrylic latex base liquid for interior or exterior application as a bonding agent to
   improve adhesion and mechanical properties of concrete patching mortars.
2. Euclid Chemical Co. "Flex-Con."
3. BASF Admixtures, Inc. "Acryl-Set."
4. L&M Construction Chemicals "Everbond."
5. Thoro System Products "Acryl 60."

2.3 CONCRETE MIXES

A. General:
1. All concrete to be ready mixed concrete conforming to ASTM C94/C94M.
2. Provide concrete of specified quality capable of being placed without segregation and, when
cured, of developing all properties required.

B. Minimum 28-Day Compressive Strength.
1. Transfer Station Tipping Floor – 6,000 PSI.
2. Push wall and external concrete applications – 4,000 PSI.

C. Air Entrainment:
1. Provide air entrainment in all concrete resulting in a total air content percent by volume as
   follows:
   a. 1/2 IN maximum aggregate size: 7 PCT maximum total air content.
   b. Air content to be measured in accordance with ASTM C231, ASTM C173, or ASTM C138.

D. Slump - 4 IN maximum, 1 IN minimum:
1. Measured at point of discharge of the concrete into the concrete construction member.
2. Concrete of lower than minimum slump may be used provided it can be properly placed and
   consolidated.
3. Pumped concrete:
   a. Provide additional water at batch plant to allow for slump loss due to pumping.
   b. Provide only enough additional water so that slump of concrete at discharge end of
      pump hose does not exceed maximum slump specified above, as long as maximum
      specified water cement ratio is not exceeded.
4. Determine slump per ASTM C143.

E. Selection of Proportions:
1. General:
   a. Proportion ingredients to:
      1) Produce proper workability, durability, strength, and other required properties.
      2) Prevent segregation and collection of excessive free water on surface.
2. Normal weight concrete cement contents and maximum water cement ratios:

<table>
<thead>
<tr>
<th>SPECIFIED STRENGTH (PSI)</th>
<th>TARGET CEMENT (LBS/CY)</th>
<th>AIR CONTENT (%)</th>
<th>MAXIMUM WATER CEMENT RATIO BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000</td>
<td>564</td>
<td>5-7</td>
<td>0.45</td>
</tr>
<tr>
<td>6000</td>
<td>658*</td>
<td>5-7</td>
<td>0.38 (superplasticizer required)</td>
</tr>
</tbody>
</table>

* The weight of fly ash plus weight of Portland cement shall equal this value.

3. Fly Ash:
   a. Fly ash is required for all 6000 PSI cast-in-place concrete, a maximum of 20 PCT by
      weight of Portland cement content per cubic yard shall be replaced with fly ash at a rate
      of 1 LB fly ash for 1 LB cement.
   b. Where fly ash is used, the water to fly ash plus cement ratio not to exceed the maximum
      water cement ratio specified in this Section.
4. Synthetic fibers at rate of 1.5 LBS per CUYD shall be used in all exposed slab and wall
   construction.
5. Sand cement grout:
   a. Three parts sand.
   b. One part Portland cement.
   c. Entrained air: Six percent plus or minus one percent.
   d. Sufficient water for required workability.
   e. Minimum 28-day compressive strength: 3,000 PSI.
6. Normal weight concrete:
   a. Proportion mixture to provide desired characteristics using one of methods described below:
      1) Method 1 (Trial Mix):
         a) Per ACI 318, Chapter 5, except as modified herein.
         b) Air content within range specified above.
         c) Record and report temperature of trial mixes.
         d) Proportion trial mixes per ACI 211.1.
      2) Method 2 (Field Experience):
         a) Per ACI 318, Chapter 5, except as modified herein:
         b) Field test records must be acceptable to Engineer to use this method.
         c) Test records shall represent materials, proportions and conditions similar to those specified.

7. Required average strength to exceed the specified 28-day compressive strength by the amount determined or calculated in accordance with the requirements of Paragraph 5.3 of ACI 318 using the standard deviation of the proposed concrete production facility as described in Paragraph 5.3.1 of ACI 318.

PART 3 - EXECUTION

3.1 PLACING CONCRETE

   A. Construction, Expansion, and Contraction Joints:
      1. Provide at locations indicated on Contract Drawings.
      2. Install construction joints perpendicular to main reinforcement with all reinforcement continued across construction joints.
      3. At least 48 HRS shall elapse between placing of adjoining concrete construction.
      4. Thoroughly clean and remove all laitance and loose and foreign particles from construction joints.
      5. Before new concrete is placed, coat all construction joints with an approved bonding adhesive used and applied in accordance with manufacturer's instructions.

   B. Placing Concrete:
      1. Place concrete in compliance with ACI 304R and ACI 304.2R.
      2. Place in a continuous operation within planned joints or sections.
      3. Begin placement when work of other trades affecting concrete is completed.
      4. Place concrete by methods which prevent aggregate segregation.
      5. Do not allow concrete to free fall more than 4 FT.
      6. Where free fall of concrete will exceed 4 FT, place concrete by means of tremie pipe or chute.

   C. Consolidation: Consolidate all concrete using mechanical vibrators supplemented with hand rodding and tamping, so that concrete is worked around reinforcement and embedded items into all parts of forms.

   D. Protection:
      1. Protect concrete from physical damage or reduced strength due to weather extremes.
      2. In cold weather comply with ACI 306R except as modified herein.
         a) Do not place concrete on frozen ground or in contact with forms or reinforcing bars coated with frost, ice or snow.
b. Minimum concrete temperature at the time of mixing:

<table>
<thead>
<tr>
<th>OUTDOOR TEMPERATURE AT PLACEMENT (IN SHADE)</th>
<th>CONCRETE TEMPERATURE AT MIXING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 30 DEGF</td>
<td>70 DEGF</td>
</tr>
<tr>
<td>Between 30-45 DEGF</td>
<td>60 DEGF</td>
</tr>
<tr>
<td>Above 45 DEGF</td>
<td>50 DEGF</td>
</tr>
</tbody>
</table>

c. Do not place heated concrete that is warmer than 80 DEGF.
d. If freezing temperatures are expected during curing, maintain the concrete temperature at or above 50 DEGF for 7 days or 70 DEGF for 3 days.
e. Do not allow concrete to cool suddenly.

3. In hot weather comply with ACI 305R except as modified herein.
   a. At air temperature of 90 DEGF and above, keep concrete as cool as possible during placement and curing.
   b. Do not allow concrete temperature to exceed 90 DEGF at placement.
   c. Prevent plastic shrinkage cracking due to rapid evaporation of moisture.
   d. Do not place concrete when the actual or anticipated evaporation rate equals or exceeds 0.2 LBS/SF/HR as determined from ACI 305R, Figure 2.1.5.

E. Curing:
   1. Begin curing concrete as soon as free water has disappeared from exposed surfaces.
   2. Cure concrete by use of moisture retaining cover, burlap kept continuously wet or by membrane curing compound.
   3. Provide protection as required to prevent damage to concrete and to prevent moisture loss from concrete during curing period.
   4. Provide curing for minimum of 7 days.
   5. Form materials left in place may be considered as curing materials for surfaces in contact with the form materials except in periods of hot weather.
   6. In hot weather follow curing procedures outlined in ACI 305R.
   7. In cold weather follow curing procedures outlined in ACI 306R.
   8. If forms are removed before 7 days have elapsed, finish curing of formed surfaces by one of above methods for the remainder of the curing period.
   9. Curing vertical surfaces with a curing compound:
      a. Cover vertical surfaces with a minimum of two coats of the curing compound.
      b. Allow the preceding coat to completely dry prior to applying the next coat.
      c. Apply the first coat of curing compound immediately after form removal.
      d. Vertical surface at the time of receiving the first coat shall be damp with no free water on the surface.
      e. A vertical surface is defined as any surface steeper than 1 vertical to 4 horizontal.

F. Form Removal:
   1. Remove forms after concrete has hardened sufficiently to resist damage from removal operations or lack of support.

3.2 CONCRETE FINISHES

A. Tolerances:
   1. Class A: 1/8 IN in 10 FT.
   2. Class B: 1/4 IN in 10 FT.

B. Slab Float Finish:
   1. After concrete has been placed, consolidated, struck off, and leveled, do no further work until ready for floating.
   2. Begin floating when water sheen has disappeared and surface has stiffened sufficiently to permit operation.
3. During or after first floating, check planeness of entire surface with a 10 FT straightedge applied at not less than two different angles.
4. Cut down all high spots and fill all low spots during this procedure to produce a surface within Class B tolerance throughout.
5. Refloat slab immediately to a uniform sandy texture.

3.3 FIELD QUALITY CONTROL

A. Contractor will employ and pay for services of a concrete testing laboratory to perform testing of concrete placed during construction.
   1. Contractor to cooperate with Owner in obtaining and testing samples.
   2. Contractor shall submit testing laboratory for approval by Engineer.
B. Tests During Construction:
   1. Strength test - procedure:
      a. A minimum of six cylinders, 6 IN DIA x 12 IN high, will be taken from each sample per ASTM C172 and ASTM C31.
      b. Cylinders will be tested per ASTM C39:
         1) One (1) at three (3) days.
         2) One (1) at five (5) days.
         3) One (1) at seven (7) days.
         4) One (1) at fourteen (14) days.
         5) Two (2) at 28 days.
      c. Cylinder test results shall be provided to Engineer and Owner within 24 HRS of testing.
   2. Strength test 4000 PSI - procedure:
      a. A minimum of four cylinders, 6 IN DIA x 12 IN high, will be taken from each sample per ASTM C172 and ASTM C31.
      b. Cylinders will be tested per ASTM C39:
         1) One (1) at seven (7) days.
         2) One (1) at fourteen (14) days.
         3) Two (2) at 28 days.
      c. Cylinder test results shall be provided to Engineer and Owner within 24 HRS of testing.
   3. Strength test - frequency:
      a. Not less than one test each day concrete placed.
      b. Not less than one test for each 50 CUYD or major fraction thereof placed in one day.
      c. Not less than one test for each type of concrete poured.
      d. Not less than one test for each concrete structure exceeding 2 CUYD volume.
   4. Slump test:
      a. Per ASTM C143.
      b. Determined for each strength test sample.
      c. Additional slump tests may be taken.
   5. Air content:
      b. Determined for each strength test sample.
   6. Temperature: Determined for each strength test sample.

C. Evaluation of Tests:
   1. Strength test results:
      a. Average of 28-day strength of two cylinders from each sample.
      1) If one cylinder manifests evidence of improper sampling, molding, handling, curing or testing, strength of remaining cylinder will be test result.
      2) If both cylinders show any of above defects, test will be discarded.

D. Acceptance of Concrete:
   1. Strength level of each type of concrete shall be considered satisfactory if both of the following requirements are met:
      a. Average of all sets of three consecutive strength tests equals or exceeds the required specified 28-day compressive strength.
b. No individual strength test falls below the required specified 28-day compressive strength by more than 500 PSI.

2. If tests fail to indicate satisfactory strength level, perform additional tests and/or corrective measures as directed by Engineer.
   a. Perform additional tests and/or corrective measures at no additional cost to Owner.

3.4 INSTALLATION AND APPLICATION

A. Transfer Station Floor Concrete Finishes:
   1. Preparation: Apply scrub coat to substrate per drawings.
   2. General: Tamp concrete to force coarse aggregate down from surface. Screed with straightedge, eliminate high and low places, bring surface to required finish elevations; slope uniformly to drains.
   3. This finish shall be applied to the entire Transfer Station floor. DO NOT POWER TROWEL THIS AREA. Use only hand trowels to harden the finish. DO NOT OVERWORK finishing in this area.
   4. After concrete has been placed, consolidated, struck off, and leveled, do no further work until ready for floating.
   5. Begin floating when water sheen has disappeared and surface has stiffened sufficiently to permit operations. Use wood or cork float.
   6. During or after first floating, check planeness of entire surface with a 10 FT straightedge applied at not less than two different angles.
   7. Cut down all high spots and fill all low spots to produce a surface with 1/4 IN tolerance throughout.
   8. Refloat slab immediately to a uniform texture.

END OF SECTION
SECTION 31 23 00
EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Earthwork: Excavation, backfilling, grading, compaction, disposal of waste and surplus materials, placing crushed stone, construction of berms, sheeting, bracing, dewatering and other Earthwork related work.

B. Related Specification Sections include but are not necessarily limited to:
1. Division 00 - Procurement and Contracting Requirements.
2. Division 01 - General Requirements.
3. Section 31 25 00 - Soil Erosion and Sediment Control.
4. Section 32 91 13 - Topsoiling and Finished Grading.
5. Section 32 92 00 – Seeding and Landscaping.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
1. ASTM International (ASTM):
   c. D1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 FT-lbf/ft³(2,700 kN-m/m)).
   d. D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
   f. D4253, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
   g. D4254, Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
2. Occupational Safety and Health Administration (OSHA):
   a. 29 CFR Part 1926.650, Occupational Safety and Health Standards, referred to herein as OSHA Standards.

1.3 DEFINITIONS

A. Excavation:
1. Consists of removal of material encountered to subgrade elevations required or indicated.
2. Includes excavation of soils; pavements and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; boulders; and rock.

B. Foundations: Footings, base slabs, foundation walls, mat foundations, grade beams, piers and any other support placed directly on soil or rock.

C. Geotechnical Engineer: Independent geotechnical specialist providing field quality control for the project.

D. Non-Structural Fill/Backfill: Soil materials placed and compacted to achieve finish grade elevations that do NOT support foundations, slabs, paving, or other flatwork.
E. Structure: Buildings, foundations, slabs, tanks, curbs, or other man-made stationary features occurring above or below ground surface.

F. Subgrade: The earth or soil layer immediately below foundation bearing elevation, subbase material, fill material, backfill material, or topsoil materials.

G. Unauthorized Excavation:
   1. Consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer.
      a. Unauthorized excavation, as well as associated remedial work as directed by Engineer or Owner’s Quality Assurance Consultant, shall be at Contractor’s expense.
   2. Unsuitable Soil Materials: Soil materials encountered at or below subgrade elevation of insufficient strength and stiffness to support construction as determined by the Owner’s Quality Assurance Consultant.

1.4 SUBMITTALS

A. Shop Drawings:
   1. See Specification Section 01 33 00 for requirements for the mechanics and administration of the submittal process.
   2. Product technical data including:
      a. Acknowledgement that products submitted meet requirements of standards referenced.
      b. Manufacturer's installation instructions.
      c. Laboratory testing for off-site materials, if applicable.
   3. Certifications.

B. Samples:
   1. Coordinate samples and testing for approval of off-site materials with the Owner’s Quality Assurance Consultant.
   2. Submit samples and source of fill and backfill materials proposed for use.
   3. Submit samples and source of borrow materials proposed for use.
   4. Test reports.
      a. Soils inspection and testing results for materials from off-site sources, if applicable.

1.5 PROJECT CONDITIONS

A. Salvageable Items: Carefully remove items to be salvaged, and store on Owner's premises unless otherwise directed.

B. Dispose of waste materials, legally, off site.
   1. Burning, as a means of waste disposal, is not permitted.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fill and Backfill:
   1. Selected material approved by Owner’s Quality Assurance Consultant from site excavation or from off site borrow.
   2. Structural Fill:
      a. May be low volume change cohesive or granular soil at Contractor’s option.
      b. Free of organic matter, frozen material and debris.
      c. Low volume change cohesive soil:
         1) ASTM D2487 classification: (CL).
         2) Liquid limit: Less than 45.
         3) Maximum plasticity index: 20.
         4) Prepared subgrade material shall consist of Structural Fill.
PART 3 - EXECUTION

3.1 PROTECTION

A. Erosion Control:
   1. See Specification Section 31 25 00.
   2. Clean paved roadways daily of any spillage of dirt, rocks or debris from vehicles and
      equipment entering or leaving site.
   3. Conduct work to minimize erosion of site. Remove eroded material washed off site.
      a. If necessary or requested by Engineer, construct stilling areas to settle and detain
         eroded material.

B. Protect existing surface and subsurface features on-site and adjacent to site as follows:
   1. Provide barricades, coverings, or other types of protection necessary to prevent damage to
      existing items indicated to remain in place.
   2. Protect and maintain benchmark, monuments or other established reference points and
      property corners.
      a. If disturbed or destroyed, replace at own expense to full satisfaction of Owner and
         controlling agency.
   3. Verify location of utilities.
      a. Omission or inclusion of utility items does not constitute nonexistence or definite
         location.
      b. Secure and examine local utility records for location data.
      c. Take necessary precautions to protect existing utilities from damage due to any
         construction activity.
         1) If utilities are indicated to remain in place, provide adequate means of support and
            protection during earthwork operations.
         2) Do not interrupt existing utilities serving facilities occupied by Owner or others,
            during occupied hours, except when permitted in writing by Owner and then only
            after acceptable temporary utility services have been provided.
         3) Obtain Owner’s approval prior to disconnecting any utility service.
      d. Repair damages to utility items at own expense.
      e. In case of damage, notify Engineer at once so required protective measures may be
         taken.
   4. Maintain free of damage, existing sidewalks, structures, and pavement, not indicated to be
      removed.
      a. Protect new and existing structures, utilities, sidewalks, pavements, and other facilities
         from damage caused by settlement, lateral movement, undermining, washout, and other
         hazards created by earthwork operations.
      b. Any item known or unknown or not properly located that is inadvertently damaged
         shall be repaired to original condition.
      c. All repairs to be made and paid for by Contractor.
   5. Provide full access to public and private premises, fire hydrants, street crossings, sidewalks
      and other points as designated by Owner to prevent serious interruption of travel.
   6. Maintain stockpiles and excavations in such a manner to prevent inconvenience or damage
      to structures on-site or on adjoining property.
   7. Avoid surcharge or excavation procedures which can result in heaving, caving, or slides.

C. Protection of trees to remain:
   1. Perform excavation by hand within dripline of large trees designated on Drawings to
      remain. Protect root systems from damage or drought to the greatest extent possible.

3.2 SITE EXCAVATION AND GRADING

A. The site excavation and grading work includes the offsite disposition of all material:
   1. That exceed quantities required for earthwork on the project.
   2. That the Owner’s Quality Assurance Representative classifies as unclassified excavation.
   3. That the Owner’s Quality Assurance Representative classifies as unacceptable.
4. That the Owner’s Quality Assurance Representative classifies as potentially contaminated.

B. Excavation and Grading:
   1. Perform as required by the Contract Drawings.
   2. Contract Drawings may indicate both existing grade and finished grade required for
      construction of Project.
      a. Stake all units, structures, piping, roads, parking areas and walks and establish their
         elevations.
      b. Perform other layout work required.
      c. Replace property corner markers to original location if disturbed or destroyed.
   3. Preparation of ground surface for embankments or fills:
      a. Before fill is started, scarify to a minimum depth of 6 IN in all proposed embankment
         and fill areas.
      b. Where ground surface is steeper than one vertical to four horizontal, plow surface in a
         manner to bench and break up surface so that fill material will bind with existing
         surface.
   4. Protection of finish grade:
      a. During construction, shape and drain embankment and excavations.
      b. Maintain ditches and drains to provide drainage at all times.
      c. Protect graded areas against action of elements prior to acceptance of work.
      d. Reestablish grade where settlement or erosion occurs.
   C. Construct embankments and fills as required by the Contract Drawings:
      1. Construct embankments and fills at locations and to lines of grade indicated.
         a. Completed fill shall correspond to shape of typical cross section or contour indicated
            regardless of method used to show shape, size, and extent of line and grade of
            completed work.
      2. If needed, provide approved fill material which is free from roots, organic matter, trash,
         frozen material, and stones having maximum dimension greater than 6 IN.
         a. Ensure that stones larger than 4 IN are not placed in upper 6 IN of fill or embankment.
         b. Do not place material in layers greater than 8 IN loose thickness.
         c. Place layers horizontally and compact each layer prior to placing additional fill.
      3. Compact soils as required to obtain specified density. Selection of appropriate equipment is
         the Contractor’s responsibility.
         a. In general, compact cohesive soils by sheepsfoot, and granular soils by pneumatic
            rollers, vibrators, or by other equipment as required to obtain specified density.
         b. Control moisture for each layer necessary to meet requirements of compaction.

3.3 USE OF EXPLOSIVES
   A. Blasting with any type of explosive is prohibited.

3.4 COMPACTION DENSITY REQUIREMENTS
   A. Obtain approval from Owner’s Quality Assurance Consultant with regard to suitability of soils
      and acceptable subgrade prior to subsequent operations.
   B. Provide dewatering system necessary to successfully complete compaction and construction
      requirements.
   C. Remove frozen, loose, wet, or soft material and replace with approved material as directed by
      Owner’s Quality Assurance Consultant.
   D. Stabilize subgrade with well graded granular materials as directed by Owner’s Quality
      Assurance Consultant.
E. Assure by results of testing that compaction densities comply with the following requirements:

1. Sitework:

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>COMPACTION DENSITY</th>
<th>MOISTURE CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Paved Areas, Sidewalks and Piping:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesive soils</td>
<td>95 PCT per ASTM D698</td>
<td>-2 to +3 PCT of optimum</td>
</tr>
<tr>
<td>Cohesionless soils</td>
<td>75 PCT relative density per ASTM D4253 and ASTM D4254</td>
<td></td>
</tr>
<tr>
<td>Unpaved (green) Areas:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohesive soils</td>
<td>90 PCT of ASTM D698</td>
<td>-2 to +3 PCT of optimum</td>
</tr>
<tr>
<td>Cohesionless soils</td>
<td>65 PCT relative density per ASTM D4253 and ASTM D4254</td>
<td></td>
</tr>
</tbody>
</table>

2. Structures:

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>COMPACTION DENSITY</th>
<th>MOISTURE CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside of structures under foundations, under equipment support pads, under slabs-on-grade and scarified existing subgrade under fill material</td>
<td>98 PCT per ASTM D698</td>
<td>-2 to +3 PCT of optimum</td>
</tr>
<tr>
<td>Outside structures next to walls, piers, columns and any other structure exterior member</td>
<td>92 PCT per ASTM D698</td>
<td>-2 to +3 PCT of optimum</td>
</tr>
</tbody>
</table>

3.5 EXCAVATION, FILLING, AND BACKFILLING FOR STRUCTURES

A. General:
1. In general, work includes, but is not necessarily limited to, excavation for structures and retaining walls, removal of underground obstructions and undesirable material, backfilling, filling, and fill, backfill, and subgrade compaction.
2. Obtain fill and backfill material necessary to produce grades required.
   a. Materials and source to be approved by Owner’s Quality Assurance Consultant.
   b. Excavated material approved by Owner’s Quality Assurance Consultant may also be used for fill and backfill.
3. In the paragraphs of this Specification Section, the word "soil" also includes any type of rock subgrade that may be present at or below existing subgrade levels.

B. Excavation Requirements for Structures:
1. General:
   a. Do not commence excavation for foundations for structures until Owner’s Quality Assurance Consultant approves:
      1) The removal of topsoil and other unsuitable and undesirable material from existing subgrade.
      2) Density and moisture content of site area compacted fill material meets requirements of specifications.
   b. Engineer grants approval to begin excavations.
2. Dimensions:
   a. Excavate to elevations and dimensions indicated or specified.
   b. Allow additional space as required for construction operations and inspection of foundations.
   c. Slope sides of excavations to comply with local codes, ordinances, and requirements of agencies having jurisdiction.
d. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

3. Removal of obstructions and undesirable materials in excavation includes, but is not necessarily limited to, removal of old foundations, existing construction, unsuitable subgrade soils, expansive type soils, and any other materials which may be concealed beneath present grade, as required to execute work indicated on Contract Drawings.
   a. If undesirable material and obstructions are encountered during excavation, remove material and replace as directed by Owner's Quality Assurance Consultant.
   b. Remove unsuitable subgrade soils located below foundations. The bottom of the overexcavation shall be located outside the exterior limits of foundations around the perimeter of structure the following horizontal distance, whichever is greater:
      1) Distance equal to depth of overexcavation below bottom of foundations.
      2) 5 FT.
      3) As directed by Owner's Quality Assurance Consultant.
   c. When excavation has reached required subgrade elevations, notify Owner's Quality Assurance Consultant, who will make an inspection of conditions.
      1) If Owner's Quality Assurance Consultant determines that bearing materials at required subgrade elevations are unsuitable, provide Subgrade Stabilization as specified herein.

4. Level off bottoms of excavations to receive foundations, floor slabs, equipment support pads, or compacted fill.
   a. Remove loose materials and bring excavations into approved condition to receive concrete or fill material.
   b. Where compacted fill material must be placed to bring subgrade elevation up to underside of construction, scarify existing subgrade upon which fill material is to be placed to a depth of 6 IN and then compact to density stated in this Specification Section before fill material can be placed thereon.
   c. Do not carry excavations lower than shown for foundations except as directed by Owner's Quality Assurance Consultant or Engineer.
   d. If any part of excavations is carried below required depth without authorization, notify Engineer and correct unauthorized excavation as directed. Corrections may include:
      1) Under soil supported footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation.
         a) Concrete fill may be used to bring elevations to proper position.
      2) In locations other than those above, including slabs on grade and pile supported foundations, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Owner's Quality Assurance Consultant.
      3) No extra compensation will be made to Contractor for correcting unauthorized excavations.

5. Make excavations large enough for working space, forms, dampproofing, waterproofing, and inspection.

6. Notify Owner's Quality Assurance Consultant and Engineer as soon as excavation is completed in order that subgrades may be inspected.
   a. Do not commence further construction until subgrade under compacted fill material, under foundations, under floor slabs-on-grade, under equipment support pads, and under retaining wall footings has been inspected and approved by the Owner's Quality Assurance Consultant as being free of undesirable material, being of compaction density required by this specification, and being capable of supporting the allowable foundation design bearing pressures and superimposed foundation, fill, and building loads to be placed thereon.
   b. Owner's Quality Assurance Consultant shall be given the opportunity to inspect subgrade below fill material both prior to and after subgrade compaction.
c. Place fill material, foundations, retaining wall footings, floor slabs-on-grade, and
   equipment support pads as soon as weather conditions permit after excavation is
   completed, inspected, and approved and after forms and reinforcing are inspected and
   approved.

d. Before concrete or fill material is placed, protect approved subgrade from becoming
   loose, wet, frozen, or soft due to weather, construction operations, or other reasons.

7. Dewatering:
   a. Where groundwater is or is expected to be encountered during excavation, install a
      dewatering system to prevent softening and disturbance of subgrade below foundations
      and fill material, to allow foundations and fill material to be placed in the dry, and to
      maintain a stable excavation side slope.
   b. Groundwater shall be maintained at least 3 FT below the bottom of any excavation.
   c. Review Geotechnical investigation before beginning excavation and determine where
      groundwater is likely to be encountered during excavation.
   d. Employ dewatering specialist for selecting and operating dewatering system.
   e. Keep dewatering system in operation until dead load of structure exceeds possible
      buoyant uplift force on structure.
   f. Dispose of groundwater to an area which will not interfere with construction operations
      or damage existing construction.
      1) Install groundwater monitoring wells as necessary.
   g. Shut off dewatering system at such a rate to prevent a quick upsurge of water that might
      weaken the subgrade.

8. Subgrade stabilization:
   a. If subgrade under foundations, fill material, floor slabs-on-grade, or equipment support
      pads is in a frozen, loose, wet, or soft condition before construction is placed thereon,
      remove frozen, loose, wet, or soft material and replace with approved compacted
      material as directed by Owner’s Quality Assurance Consultant.
   b. Provide compaction density of replacement material as stated in this Specification
      Section.
   c. Loose, wet, or soft materials, when approved by Owner’s Quality Assurance
      Consultant, may be stabilized by a compacted working mat of well graded crushed
      stone.
   d. Compact stone mat thoroughly into subgrade to avoid future migration of fines into the
      stone voids.
   e. Remove and replace frozen materials as directed by Owner’s Quality Assurance
      Consultant.
   f. Method of stabilization shall be performed as directed by Owner’s Quality Assurance
      Consultant.
   g. Do not place further construction on the repaired subgrades, until the subgrades have
      been approved by the Owner’s Quality Assurance Consultant.

9. Do not place floor slabs-on-grade including equipment support pads until subgrade below
   has been approved, piping has been tested and approved, reinforcement placement has been
   approved, and Contractor receives approval to commence slab construction.
   a. Do not place building floor slabs-on-grade including equipment support pads when
      temperature of air surrounding the slab and pads is or is expected to be below 40 DEGF
      before structure is completed and heated to a temperature of at least 50 DEGF.

10. Protection of structures:
    a. Prevent new and existing structures from becoming damaged due to construction
        operations or other reasons.
    b. Prevent subgrade under new and existing foundations from becoming wet and
        undermined during construction due to presence of surface or subsurface water or due
        to construction operations.

11. Shoring:
    a. Shore, slope, or brace excavations as required to prevent them from collapsing.
    b. Remove shoring as backfilling progresses but only when banks are stable and safe from
       caving or collapse.
c. Construct shoring that is required to retain water as part of the dewatering system, using non-permeable details such as interlock sealant for sheet piles.

12. Drainage:
   a. Control grading around structures so that ground is pitched to prevent water from running into excavated areas or damaging structures.
   b. Maintain excavations where foundations, floor slabs, equipment support pads or fill material are to be placed free of water.
   c. Provide pumping required to keep excavated spaces clear of water during construction.
   d. Should any water be encountered in the excavation, notify Engineer and Owner’s Quality Assurance Consultant.
   e. Provide free discharge of water by trenches, pumps, wells, well points, or other means as necessary and drain to point of disposal that will not damage existing or new construction or interfere with construction operations.

13. Frost protection:
   a. Do not place foundations, slabs-on-grade, equipment support pads, or fill material on frozen ground.
   b. When freezing temperatures may be expected, do not excavate to full depth indicated, unless foundations, floor slabs, equipment support pads, or fill material can be placed immediately after excavation has been completed and approved.
   c. Protect excavation from frost if placing of concrete or fill is delayed.
   d. Where a concrete slab is a base slab-on-grade located under and within a structure that will not be heated, protect subgrade under the slab from becoming frozen until final acceptance of the Project by the Owner.
   e. Protect subgrade under foundations of a structure from becoming frozen until structure is completed and heated to a temperature of at least 50 DEGF.

C. Fill and Backfill Inside of Structure and Below Foundations, Base Slabs, Floor Slabs, Equipment Support Pads and Piping:
   1. General:
      a. Subgrade to receive fill or backfill shall be free of undesirable material as determined by Owner’s Quality Assurance Consultant and scarified to a depth of 6 IN and compacted to density specified herein.
      b. Surface may be stepped by at not more than 12 IN per step or may be sloped at not more than 2 PCT.
      c. Do not place any fill or backfill material until subgrade under fill or backfill has been inspected and approved by Owner’s Quality Assurance Consultant as being free of undesirable material and compacted to specified density.
   2. Obtain approval of fill and backfill material and source from Owner’s Quality Assurance Consultant prior to placing the material.
   3. Fill and backfill placement:
      a. Prior to placing fill and backfill material, optimum moisture and maximum density properties for proposed material shall be obtained from Owner’s Quality Assurance Consultant.
      b. Place fill and backfill material in thin lifts as necessary to obtain required compaction density.
      c. Compact material by means of equipment of sufficient size and proper type to obtain specified density.
      d. Use hand operated equipment for filling and backfilling within 5 FT of walls and less than 3 FT above pipes.
         1) Compaction equipment exceeding 3000 LBS dead weight shall not be used within 5 FT of the wall as a minimum
         2) Contractor is responsible for method of compaction so as not to damage wall.
      e. Use hand operated equipment for filling and backfilling next to walls.
      f. Do not place fill and backfill when the temperature is less than 40 DEGF and when subgrade to receive fill and backfill material is frozen, wet, loose, or soft.
      g. Use vibratory equipment to compact granular material; do not use water.
4. Where fill material is required below foundations, place fill material, conforming to the required density and moisture content as required to fill the specified overexcavation to bottom of foundation.

D. Filling and Backfilling Outside of Structures:
1. This paragraph of this Specification applies to fill and backfill placed outside of structures above bottom level of both foundations and piping but not under paving.
2. Provide material as approved by Owner’s Quality Assurance Consultant for filling and backfilling outside of structures.
3. Fill and backfill placement:
   a. Prior to placing fill and backfill material, obtain optimum moisture and maximum density properties for proposed material from Owner’s Quality Assurance Consultant.
   b. Place fill and backfill material in thin lifts as necessary to obtain required compaction density.
   c. Compact material with equipment of proper type and size to obtain density specified.
   d. Use hand operated equipment for filling and backfilling within 5 FT of walls and less than 3 FT above pipes.
      1) Compaction equipment exceeding 3000 LBS dead weight shall not be used within 5 FT of the wall as a minimum
      2) Contractor is responsible for method of compaction so as not to damage wall.
   e. Use only hand operated equipment for filling and backfilling next to walls and retaining walls.
   f. Do not place fill or backfill material when temperature is less than 40 DEGF and when subgrade to receive material is frozen, wet, loose, or soft.
   g. Use vibratory equipment for compacting granular material; do not use water.
4. Backfilling against walls:
   a. Do not backfill around any part of structures until each part has reached specified 28-day compressive strength and backfill material has been approved.
   b. Do not start backfilling until concrete forms have been removed, trash removed from excavations, pointing of masonry work, concrete finishing, dampproofing and waterproofing have been completed.
   c. Do not place fills against walls until floor slabs at top, bottom, and at intermediate levels of walls are in place and have reached 28-day required compressive strength to prevent wall movement.
      1) See Contract Drawings for specific exceptions.
   d. Bring backfill and fill up uniformly around the structures and individual walls, piers, or columns.

E. Backfilling Outside of Structures Under Piping or Paving:
1. When backfilling outside of structures requires placing backfill material under piping or paving, the material shall be placed from bottom of excavation to underside of piping or paving at the density required for fill under piping or paving as indicated in this Specification Section.
2. This compacted material shall extend transversely to the centerline of piping or paving a horizontal distance each side of the exterior edges of piping or paving equal to the depth of backfill measured from bottom of excavation to underside of piping or paving.
3. Provide special compacted bedding or compacted subgrade material under piping or paving as required by other Specification Sections for the Project.

3.6 FIELD QUALITY CONTROL
A. All excavation, trenching, and related sheeting, bracing, etc. shall comply with the requirements of OSHA standards 29 CFR Part 1926.650 Subpart P, and state requirements. Where conflict between OSHA and state regulations exists, the more stringent requirements shall apply.
B. Responsibilities of Testing Agency for Site Excavation and Grading:
   1. All testing, observation and work indicated as being performed by the Owner’s Quality Assurance Consultant in other than Article 3.5 of this Specification Section.
2. Services will include verification and documentation of satisfactory soil materials, subgrade quality, sampling, placement, moisture conditioning, compaction and testing of proposed soil materials, and field testing for quality control.

3. Moisture density relations, to be established by the Owner’s Quality Assurance Consultant required for all materials to be compacted.

4. Extent of compaction testing will be as necessary to assure compliance with specifications.

END OF SECTION
SECTION 31 25 00
SOIL EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes: Soil erosion and sediment control.
B. Related Sections include but are not necessarily limited to:
   1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
   2. Division 1 - General Requirements.
   3. Section 32 92 00 – Seeding and Landscaping.

1.2 QUALITY ASSURANCE
A. Referenced Standards:

1.3 SUBMITTALS
A. SUDAS Standard Specifications 2015, Section 9010.1.03 - Submittals.
B. SUDAS Standard Specifications 2015, Section 9040.103 - Submittals

1.4 MEASUREMENT AND PAYMENT
A. No additional compensation as defined in SUDAS Measurement and Payment provisions are applicable; all work will be provided under Contractor’s Lump Sum price and identified in the Schedule of Values.

PART 2 - PRODUCTS

2.1 MATERIALS
A. Turf Reinforcement Mats (TRM):
   1. SUDAS Standard Specifications 2015, Section 9040.2.17.
B. Temporary Erosion Control Seeding:
   1. SUDAS Standard Specifications 2015, Section 9040.2.02 - Temporary Seeding - Type 4.
C. Mulch:
   1. SUDAS Standard Specifications 2015, Section 9040.2.16 - Erosion Control Mulch – Conventional Mulch.
D. Dust Control:
   1. SUDAS Standard Specifications 2015, Section 9040.2.15 - Dust Control.
E. Temporary Rolled Erosion Control Products (RECP):
   1. See Specification Section 32 92 00.
F. Rip Rap:
   1. SUDAS Standard Specifications 2015, Section 9040.2.09 – Rip Rap - Class D.
G. Stabilization Construction Entrance:
   1. SUDAS Standard Specifications 2015, Section 9040.2.14 - Stabilization Construction Entrance.
PART 3 - EXECUTION

3.1 SERVICES TO BE PROVIDED BY OWNER

A. NPDES Preparation and Submittal, including Notice of Intent (NOI), is not necessary for this project. Project work is anticipated to fall under the Owner’s existing Industrial Storm Water General Permit. See Specification Section 01 35 05 for specifics.

B. Obtain required Erosion and Sediment Control permits and approvals from local jurisdiction.

C. Prior to the end of the Site Grading and Surcharge project the Owner will have previously installed controls (silt fence) cleaned and returned to like new condition.

3.2 SERVICES TO BE PROVIDED BY CONTRACTOR

A. SWPPP Management: SUDAS Standard Specifications 2015, Section 9040.3.02.
   1. Contactor will identify any required changes necessitated by Contractor’s Work.
   2. Coordinate construction with SWPPP and required controls to verify that all Work related releases pass through an erosion and sediment control measure of adequate design and construction.
      a. Identify to Owner any required changes to SWPPP in accordance with SUDAS Standard Specifications 2015, Section 9040.1.07 - Special Requirements.

B. Erosion and Sediment Control Inspection: SUDAS Standard Specifications 2015, Section 9040.3.03.
   1. Contactor will be responsible for maintenance and repair of existing Owner provided controls as well as Contractor provided controls.
   2. Contactor shall replace any erosion and sediment control measures installed by Owner or Contractor and damaged or removed by Contractor, including damage by lack of maintenance.

C. Turf Reinforced Mats:
   1. SUDAS Standard Specifications 2015, Section 9040.3.22 – Turf Reinforcement Mats.

D. Silt Fences: SUDAS Standard Specifications 2015, Section 9040.3.18.
   1. Contactor will provide any additional Silt Fence as shown on Drawings and any other controls necessitated by alternate construction methods or locations at no additional cost.

E. Control soils on site such that track-out onto Owner Main Access Road does not occur.

F. Dust Control:
   1. SUDAS Standard Specifications 2015, Section 9040.3.20 - Dust Control.

G. Rip Rap:
   1. SUDAS Standard Specifications 2015, Section 9040.3.13 - Rip Rap.

H. Stabilization Construction Entrance:
   1. SUDAS Standard Specifications 2015, Section 9040.3.19 - Stabilization Construction Entrance.

I. Mulch:
   1. SUDAS Standard Specifications 2015, Section 9040.3.21 - Erosion Control Mulching.
J. Temporary Rolled Erosion Control Products (RECP):
   1. See Specification Section 32 92 00.

3.3 DURING CONSTRUCTION PERIOD

   A. Contractor is responsible for maintenance of all Owner provided and Contractor provided
      erosion and sediment control measures (unless noted otherwise) within the Limits of
      Construction.
   B. Provide Dust Control.
   C. Contractor shall sweep or otherwise clean all dirt and soils off of the Owner Main Access Road
      at a minimum once a day at the end of the work day.
      1. More frequent sweeping and cleaning shall be undertaken as necessary if dirt or soil from
         Work is observed on the site access drive.
      2. Sweeping equipment shall be wet sweeping or vacuum supplemented so as not to cause
         airborne dust off-site.
   D. Temporary Erosion Control Seeding: See Specification Section 32 92 00.

3.4 NEAR COMPLETION OF CONSTRUCTION

   A. Remove all sediment from erosion and sediment control devices.
   B. Complete any other maintenance required to achieve Final Completion.
   C. Eliminate temporary erosion control measures, remove silt fence.
   D. Grade to finished or existing grades.
   E. Fine grade all remaining earth areas, seed, apply onsite compost provided by Owner to a
      minimum depth of 3 IN, and landscape.
      1. See Section 32 92 00. Install Erosion Control Blankets:
         a. SUDAS Standard Specifications 2015, Section 9040.3.08 - Temporary Rolled Erosion
            Control Products.

END OF SECTION
DIVISION 32
EXTERIOR IMPROVEMENTS
SECTION 32 91 13
TOPSOILING AND FINISHED GRADING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Topsoiling and finished grading.

B. Related Sections include but are not necessarily limited to:
   1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
   2. Division 1 - General Requirements.
   3. Section 31 23 00 - Earthwork.
   4. Section 31 25 00 - Soil Erosion and Sediment Control.
   5. Section 32 92 00 - Seeding and Landscaping.

C. Location of Work: All areas within limits of grading and all areas outside limits of grading which are disturbed in the course of the work.

1.2 SUBMITTALS

A. Shop Drawings:
   1. See Section 01 33 00 for requirements for the mechanics and administration of the submittal process.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil:
   1. Original surface soil typical of the area.
   2. Existing topsoil stockpiled by Owner or existing soils blended with onsite compost provided by Owner.
   3. Capable of supporting native plant growth.

2.2 TOLERANCES

A. Finish Grading Tolerance: 0.1 FT plus/minus from required elevations.

PART 3 - EXECUTION

3.1 PREPARATION

A. Correct, adjust and/or repair rough graded areas.
   1. Cut off mounds and ridges.
   2. Fill gullies and depressions.
   3. Perform other necessary repairs.
   4. Bring all sub-grades to specified contours, even and properly compacted.

B. Loosen surface to depth of 2 IN, minimum.

C. Remove all stones and debris over 2 IN in any dimension.

D. Remove existing wetland topsoil within areas designated on plan to a minimum depth of 12 inches and stockpile on site.
3.2 ROUGH GRADE REVIEW
   A. Reviewed by Owner’s Construction Quality Assurance Consultant.

3.3 PLACING TOPSOIL
   A. Do not place when subgrade is wet or frozen enough to cause clodding.
   B. Provide finished surface free of stones, sticks, or other material 1 IN or more in any dimension.
   C. Provide finished surface smooth and true to required grades.
   D. Restore stockpile area to condition of rest of finished work.

3.4 ACCEPTANCE
   A. Upon completion of topsoiling, obtain Engineer's acceptance of grade and surface.
   B. Make test holes where directed to verify proper placement and thickness of topsoil.

END OF SECTION
SECTION 32 92 00
SEEDING AND LANDSCAPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Seeding and landscape planting:
      a. Soil preparation.
      b. Lawn-type seeding.
      c. Native grass seeding.
      d. Plants and planting.
      e. Cover crops.
      f. Maintenance of new materials.
      g. Replacement of dead or impaired materials at the end of the first growing season.

B. Related Specification Sections include but are not necessarily limited to:
   1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
   2. Division 01 - General Requirements.
   4. Section 31 25 00 - Soil Erosion and Sediment Control.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. Iowa Statewide Urban Design and Specifications - SUDAS Standard Specifications
   2. American Nursery and Landscape Association/American National Standards Institute
      (ANLA/ANSI):
      a. Z60.1, American Standard for Nursery Stock.
   3. AOAC International (AOAC).
   4. ASTM International (ASTM):
      b. D5276, Standard Test Method for Drop Test of Loaded Containers by Free Fall.
   5. United States Department of Agriculture (USDA):

B. Quality Control:
   1. Fertilizer:
      a. If Engineer determines fertilizer requires sampling and testing to verify quality, testing
         will be done at Contractor's expense, in accordance with current methods of the AOAC.
      b. Upon completion of Project, a final check of total quantities of fertilizer used will be
         made against total area seeded.
      c. If minimum rates of application have not been met, Contractor will be required to
         distribute additional quantities to make up minimum application specified.

1.3 SUBMITTALS

A. Shop Drawings:
   1. See Specification Section 01 33 00 for requirements for the mechanics and administration of
      the submittal process.
   2. Product technical data including:
      a. Acknowledgement that products submitted meet requirements of standards referenced.
      b. Manufacturer's installation instructions.
      c. Per SUDAS Section 9010.1.03 Submittals.
d. For Native Grass plantings in fall, list type and rate of cover crop included in planting 
and procedures for planting.

e. Source and location of plants, and plant material, as per Paragraph 3.3A.

3. Certification that each container of seed delivered will be labeled in accordance with 
Federal and State Seed Laws and equals or exceeds Specification requirements.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Seed and Fertilizer:
   1. Per SUDAS Section 9010.1.05 - Delivery, Storage and Handling.
   2. Furnish seed in sealed standard containers labeled with producer's name and seed analysis.
   3. Remove from the site seed which has become wet, moldy, or otherwise damaged in transit.
   4. Furnish fertilizer uniform in composition, free flowing and suitable for application with 
      approved equipment, delivered to site in bags or other containers, each fully labeled and 
      bearing the name, and warranty of the producer.

B. Plant Materials: Per SUDAS Section 9030.1.05.

1.5 SEQUENCING AND SCHEDULING

A. Installation Schedule:
   1. Provide schedule showing when trees, shrubs, groundcovers and other plant materials are 
      anticipated to be planted.
   2. For seeding, follow requirements of SUDAS Section 9010.1.06.
   3. Indicate planting schedules in relation to schedule for finish grading and topsoiling.
   4. Indicate anticipated dates Engineer will be required to review installation for initial 
      acceptance and final acceptance.

B. Pre-installation Meeting:
   1. Meet with Engineer and other parties as necessary to discuss schedule and methods, unless 
      otherwise indicated by Engineer.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS AND SUPPLIERS

A. Submit request for substitutions in accordance with Section 01 25 13 and SUDAS Section 
   9010.1.04 for seeding and Section 9030.1.04 for plant materials.

2.2 MATERIALS

A. General Seed requirements per SUDAS 9010.2.01., Seed, Type 3, Table 9010.08.

B. Temporary Erosion Control Mixture and Cover Crop Mixture: Per SUDAS Section 9010, Table 
   9010.03 Stabilizing Crop and 2.02.D Table 9010.09, Type 4 Seed Mixture.

C. Mulch:
   1. For seeded areas: Per SUDAS Section 9010.2.07 for conventional seeding.

D. Turf Reinforced Mats
   1. Per SUDAS Section 9040.2.17.

E. Temporary Rolled Erosion Control Products (RECP):
   1. Per SUDAS Section 9040.2.05. RECP Rollmax S150 or approved equal, anchor stakes or 
      staples as recommended by the manufacturer. Apply to slopes at 3:1 or steeper.
   2. Per SUDAS Section 9040.2.05. RECP Rollmax DS75 or approved equal, anchor stakes or 
      staples as recommended by the manufacturer. Apply where indicated on Drawings.

F. Fertilizer:
   1. Per the requirements of SUDAS Section 9010.2.03.
   2. Do not use fertilizer in native grass seeded areas.
G. Herbicide:
   1. In gravel or rock mulch areas: Novosac 4-G by ACME Agriculture Products.

H. Water:
   1. Water free from substances harmful to grass growth.
   2. Provide water from source approved prior to use.
      a. Pay all costs for water used.

**PART 3 - EXECUTION**

**3.1 SOIL PREPARATION**

A. General:
   1. Comply with Stormwater Pollution Prevention Plan for stabilization and temporary cover crop planting, including timing for installation.
   2. Limit preparation to areas which will be planted soon after.
   3. Provide facilities to protect and safeguard all persons on or about premises.
   4. Protect existing trees and vegetation designated to remain.
   5. Verify location and existence of all underground utilities.
      a. Take necessary precaution to protect existing utilities from damage due to construction activity.
      b. Repair all damages to utility items at sole expense.
   6. Provide facilities such as protective fences and/or watchmen to protect work from vandalism.
      a. Contractor to be responsible for vandalism until acceptance of work in whole or in part.

B. Fertilization per SUDAS Section 9010.3.04.B.

C. Turf Reinforced Mats: Per SUDAS Section 9040.3.22.

D. Temporary Erosion Control Seedbed Preparation: Per SUDAS Section 9010.3.04.C and 9010.3.04.D.

**3.2 INSTALLATION**

A. Seed Preparation: Per SUDAS Section 9010.3.04.E.

B. Per SUDAS Section 9010.3.04.E, 2, 3 and 4.
   1. Perform seeding work from March 1 to May 31 for spring planting, and August 10 to September 30 for fall planting, unless otherwise approved by Engineer.
   2. Perform Temporary Erosion Control seeding per dates specified by SUDAS Section 9010.2.02.E.
   3. For seeding outside of specified seeding dates, follow requirements of SUDAS Section 9010.3.04.E.4.
   4. Stop work when work extends beyond most favorable planting season for species designated, or when satisfactory results cannot be obtained because of drought, high winds excessive moisture, or other factors.
      a. Resume work only when favorable conditions develop.
   5. Application rates per the following:
      a. SUDAS Section 9010.2.02.A, Table 9010.08.
   6. Mulching: Per SUDAS Section 9010.3.04.F.

C. Temporary Rolled Erosion Control Products (RECP):
   1. Per SUDAS Section 9040.3.08.

**3.3 MAINTENANCE AND REPLACEMENT**

A. General:
   1. Begin maintenance of planted areas immediately after each portion is planted and continue until final acceptance or for a specific time period as stated below, whichever is the longer.
2. Provide and maintain temporary piping, hoses, and watering equipment as required to convey water from water sources and to keep planted areas uniformly moist as required for proper growth.

3. Protection of new materials:
   a. Provide barricades, coverings or other types of protection necessary to prevent damage to existing improvements indicated to remain.
   b. Repair and pay for all damaged items.

4. Replace unacceptable materials with materials and methods identical to the original specifications unless otherwise approved by the Engineer.

B. Seeded Lawns:
1. Maintain seeded lawns: 90 days, minimum, after installation and any subsequent repairs.
2. Maintenance period begins at completion of planting, completion of repairs, or installation.
3. Engineer will review planting area after installation for initial acceptance.
4. Maintain planted areas by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading, and replanting as required to establish a smooth, uniform planting area, free of weeds and eroded or bare areas.
5. Lay out temporary watering/irrigation system and arrange watering schedule to avoid walking over muddy and newly seeded areas.
   a. Use equipment and water to prevent puddling and water erosion and displacement of seed or mulch.
6. Mow grassed/planted areas as soon as there is enough top growth to cut with mower set at recommended height for principal species planted.
   a. Repeat mowing as required to maintain height.
   b. Do not delay mowing until grass blades bend over and become matted.
   c. Do not mow when grass is wet.
   d. Time initial and subsequent mowings as required to maintain a height of 1-1/2 to 2 IN.
   e. Do not mow lower than 1-1/2 IN.
7. Remulch with new mulch in areas where mulch has been disturbed by wind or maintenance operations sufficiently to nullify its purpose.
   a. Anchor as required to prevent displacement.
8. Unacceptable plantings are those areas that do not meet the quality of the specified material, produce the specified results, or were not installed to the specified methods.
9. Replant bare areas using same materials specified.
10. Engineer will review final acceptability of installed areas at end of maintenance period.
11. Maintain repaired areas until remainder of maintenance period or approved by Engineer, whichever is the longer period.

END OF SECTION
SECTION 33 56 10
ABOVE GROUND FUEL SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Above ground package 1,000 gallon fuel storage tank, piping, and dispensing system with
      relocated Fuel Master Equipment including all wiring, safety devices, structures, accessories
      and appurtenances required for a complete operating and approved installation.
   2. Diesel fuel dispensing systems:
      a. Tank mounted fuel pump.
      b. Tank mounted dispenser.
      c. Piping.
   3. Fuel Tank Overfill / Leak Detection System.
   4. Furnish all labor, materials, tools, equipment, and services for fuel storage tank and
      relocated systems as indicated, in accordance with provisions of Contract Documents.
   5. It is the intention of these Specifications to result in a finished and fully-compliant fueling
      station product consisting of the equipment described herein and on the Drawings, and all
      other required equipment and appurtenances required to provide turn-key design,
      construction, and operation.

B. Related Sections include but are not necessarily limited to:
   1. Division 00 - Procurement and Contracting Requirements.
   2. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Society of Mechanical Engineers (ASME):
      a. B1.1, Unified Inch Screw Threads (UN and UNR Thread Form).
      d. B16.11, Forged Steel Fittings, Socket Welding and Threaded.
      e. B16.21, Nonmetallic Flat Gaskets for Pipe Flanges.
   2. ASTM International (ASTM):
   3. International Fire Code (IFC):
      a. 30, Flammable and Combustible Liquids Code.
      b. 30A, Automotive and Marine Service Station Code.
      c. 70, National Electrical Code.
   5. Steel Tank Institute (STI):
      a. 700-50-5007, Installation Instructions for Shop Fabricated Stationary Aboveground Storage Tanks for Flammable, Combustible Liquids (R912).
      b. SP031, Standard for Repair of Shop-Fabricated Aboveground Tanks for Storage of Flammable and Combustible Liquids.
6. Underwriters Laboratories Inc. (UL):
   a. 142, Steel Aboveground Tanks for Flammable and Combustible Liquids.
   b. 2085, Insulated Aboveground Tanks for Flammable and Combustible Liquids.
7. Society for Protective Coatings (SSPC):
   a. PA 1, Shop, Field, and Maintenance Painting of Steel.
8. Society of Automotive Engineers International (SAE):
   a. AMS3275, Sheet, Acrylonitrile Butadiene (NBR) Rubber and Non-Asbestos Fiber Fuel and Oil Resistant.
9. State Regulations:
   a. Iowa Administrative Code 661-221, Flammable and Combustible Liquids.

B. Fuel pumps shall be UL listed and labeled for the diesel or gasoline blends specified, as appropriate.

C. Qualifications:
   1. Installer shall have successfully completed at least three (3) projects of the same scope and the same size or larger within the last 6 years.
      a. Installer shall demonstrate specific installation experience in regard to the specific system installation to be performed.
      b. Installer shall meet the licensing requirements in the State of Iowa.

1.3 SYSTEM DESCRIPTION

A. The Work shall include the design, fabrication, and installation of the entire fuel storage and dispensing system in conformance with pertinent federal, state, and local code requirements.
   1. The completed installation shall conform to NFPA and IFC as applicable.
   2. Unattended self-service dispensing system shall comply with IFC 2204.3

B. Obtain all applicable permits associated with the fueling facility.

C. The work shall include but not be limited to:
   1. Remove diesel tanks from service and remove any remaining product in the tank.
   2. Salvage and recondition Fuel Master and all related appurtenances which are suitable and approved by the Owner for reuse.
   3. Remove / demolish all tank appurtenances including instruments, vents, and piping.
   4. Install one (1) new 1,000 GAL, aboveground, double-wall, diesel tank and associated safety devices at the new location per Contract Drawings.
   5. Provide the entire fuel distribution system as a complete and fully operational system.
   6. Size, select, construct, and install equipment and system components to operate together as a complete system.
   7. Pipe, piping components and associated safety devices specified herein shall be compatible with the fuel to be handled.
   8. Factory install new tank appurtenances:
      a. Primary tank emergency vent.
      b. Secondary tank emergency vent.
      c. Updraft vent and vent pipe.
      d. Clock gauge.
      e. Tank remote fill line, including:
         1) Tank overfill prevention valve.
         2) Tight-fit fill adapter.
         3) Locking ball valve.
         4) Check valve.
         5) Remote Spill Container.
         6) Waste oil box.
         7) Associated piping.
         8) Pump and Dispenser.
         9) Discharge line accessories:
10) Filter.
11) Break away hose with automatic nozzle and swivel.
12) As required, install all new emergency fuel shut-off station at Owner approved location.
13) All interconnecting wiring on the fuel skid. All interconnecting wiring shall be pre-wired on the skid.
   f. Interstitial space leak detection sensor.
9. Install new monitoring system panel and connect with following sensors and alarms:
   a. Clock gauge alarm contacts for overfill alarm.
   b. Interstitial space leak detection sensor.
   c. Leak detection sensors.

1.4 SUBMITTALS
A. Shop Drawings:
   1. See Section 01 33 00 for requirements for the mechanics and administration of the submittal process.
   2. Complete detailed Drawings of equipment provided including dimensions and connection locations.
   3. Wiring diagrams, piping, and control system layouts.
   4. Manufacturer's standard catalog data, prior to the purchase or installation of the particular component, highlighted to show brand name, model number, size, options, performance charts and curves, etc., in sufficient detail to demonstrate compliance with contract requirements on all parts and equipment.
B. Copy of the Certificate of Approval for all equipment and devices where required by code.
C. Project Data:
   1. Operation and Maintenance Manuals.
      a. See Section 01 33 04 for the requirements for content of Operation and Maintenance manuals.
   2. Acknowledgement that products submitted meet requirements of standards referenced.
   3. Copies of manufacturer's written directions regarding material handling, delivery, storage and installation.
   4. Test reports:
      a. Copies of pressure test results on all piping systems.
      b. Copies of pressure test results on primary and secondary tanks.
      c. Notification of time and date of piping pressure tests.
D. Certificates:
   1. Contractor Qualifications: State licenses or certificates, if applicable.

1.5 DELIVERY, STORAGE, AND HANDLING
A. Handle, store, and protect pipe and piping components to prevent damage before and during installation in accordance with the manufacturer’s recommendations. Replace damaged or defective items.
B. Protect equipment during handling using method recommended by manufacturer.
C. Prevent Damage to Equipment During Transit.
   1. Repair abrasions, scars, and blemishes.
   2. If repair of satisfactory quality cannot be achieved replace damaged material immediately.

1.6 PROJECT/SITE CONDITIONS
A. Fuel required for the testing efforts, as specified in this Section, will be provided and delivered by the Owner. Do not test any system with fuel or liquid not intended for final system operation. Fuel used in the system will remain the property of the Owner.
PART 2 - PRODUCTS

2.1 ABOVE GRADE FUEL SERVICE PIPING

A. System Description:
   1. Fuel and Vent Piping:
   2. Pipe and piping components specified herein shall be designed to handle a working pressure
      of 275 PSIG at 100 DEGF.
   3. Pipe shall meet the material, fabrication, and operating requirements of ASME B31.3.
   4. Fittings flanges, and piping components shall meet all code requirements.

2.2 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following Manufacturers are
   acceptable:
   1. Aboveground storage tanks:
      a. Containment Solutions.
      b. Convault.
      c. Highland Tank.
      d. We-Mac Tanks.
      e. Approved equals.
   2. Fueling system valves and accessories:
      a. Morrison Brothers.
      b. OPW.
      c. Approved equals.
   3. Leak detection, alarm, and electronic level sensing:
      a. Pneumercator.
      b. Veeder-Root.
      c. Approved equals.
   4. Vehicle refueling dispensers:
      a. Gasboy.
      b. Tokheim.
      c. Gilbarco.
      d. Approved equals.

B. Submit requests for "or equal" substitutions in accordance with Contract Requirements.

2.3 EXISTING FUELING SYSTEM

A. Schedule for removing the existing fueling system from service shall be coordinated with the
   Owner.

2.4 NEW ABOVEGROUND STORAGE TANK

A. New diesel tank shall be a skid mounted, packaged, horizontal above ground, fire rated, double
   wall vault type design meeting all code requirements.
   1. Quantity: 1.
   2. Capacity: 1,000 GAL.

B. Tank shall be designed with ballistic and vehicle impact protection.

C. Tank system shall be a standard size, standard option tank system or approved equal.
   1. Galvanized materials (zinc coated) shall not be allowed in direct contact with any fuel.

D. The storage tank system must be provided with all safety and overfill prevention devices
   required by IFC, NFPA 30, NFPA 30A, and local codes.
   1. Tank system shall be a factory fabricated storage tank with integral secondary containment,
      in accordance with NFPA 30 and NFPA 30A.
   2. Design and manufacture tank system for horizontal above ground installation.
3. Primary tank:
   a. Construct primary storage tank of single wall ASTM A36 steel in accordance with
      UL 142.
   b. Continuous welds on all exterior seams.
   c. Manufacture to STI specifications.

4. Secondary tank:
   a. The secondary containment shall be impervious to corrosion.
   b. The secondary tank shall provide pressure testable containment for primary tank.

E. Skid mount tank system and provide with lifting lugs which allow tank handling.

F. Tank shall have protective coatings. Corrosion resistant industrial paint 3 to 5 MIL thickness:
   1. Coating shall come with 10+YR warranty.

G. Tank Nameplates:
   1. Attach nameplates listing manufacturer’s name, address, model number, serial number,
      capacity, and code stamps as applicable.
   2. Fabricate nameplates from corrosion resistant metal with stamped lettering.

H. Tank Piping Penetrations per manufacturer’s standard and comply with all codes:
   1. Piping shall be ASTM A53 black steel construction. Minimum wall thickness shall be
      Schedule 40.

I. Tank Components shall include emergency vent, updraft vent, overfill prevention valve, vehicle
   refueling dispensing system and all necessary accessories.
   1. Fuel dispensing system shall be complete as necessary with ball valve, line strainer, external
      emergency valve, solenoid valve, and expansion relief valve.
      a. Provide one (1) tank mounted dispenser. Dispenser can be located on side or front of
         tank.
      b. Provide dispenser only for use with tank mounted submersible pump located on the
         aboveground storage tank.
      c. Dispenser:
         1) Diesel.
      d. Corrosion resistant cabinet.
      e. Shall be compatible with and have the ability to communicate with relocated Fuel
         Master fuel control system.
      f. Register: LCD type for 999 GAL delivery with battery backed 999,999 GAL totalizer.
      g. Display on front of cabinet.
      h. Pulser: Compatible with fuel management system.
         1) Selectable pulse/gallon output: 1, 10, 100, 250, 500, or 1,000 pulses per GAL.
         i. Meter: Multi-piston positive displacement meter accurate to within ±1 PCT.
      j. Solenoid valve: Electrically operated 1 IN, 115 V.
      k. Hose: Smooth bore, 1 IN, black rubber, 12 FT long compatible with diesel fuel.
         1) Provide automatic nozzle, breakaway valve and swivel.
         2) Automatic nozzle:
            a) Restrict flow when tank is full.
            b) Provide pad-lock locking mechanism.
      l. Filter and strainer: Suitable for use with No. 2 diesel fuel.
      m. Base, frame and panels designed for outdoor use to provide vibration free support and
         weather protection for items above.
         1) Provide exterior finishes of stainless steel or electrostatically primed and finished
            with a durable non-fading baked enamel.
         2) Color to be approved by Engineer.
      n. All items UL listed for diesel fuel as appropriate.
         1) Dispensing system will be located adjacent to a gasoline dispenser as shown on
            drawings.
      o. Provide lights to illuminate product panels and register areas.
p. Pump:
   1) Pump shall be self lubricating and easily removable without disconnecting
      discharge piping.
      a) The pump and motor assembly shall be readily separable from the pump
         column pipe to allow for simple field replacement of pump and / or motor.
   2) Pump shall be provided with check valve, air eliminator, expansion relief valve,
      siphon nozzle and venturi, siphon check and pressure test screw.
   3) Submersible pumps shall fit standard 4 IN NPT tank opening.
   4) Pump intake inlet shall be horizontal to prevent drawing sediment from the tank
      bottom into the pump inlet.
   5) Pump manifold shall be completely sealed against product leakage to the ground
      and water leakage to the tank.
   6) Siphon system shall include integral siphon check valve to maintain liquid level
      after pump has been de-energized.
   7) Submersible pump for dispensing diesel:
      a) Flow rate: 12 GPM minimum.
      b) 115 V.
      c) 1/3 HP.
   8) General Description:
      a) Fixed speed.
      b) Pumps shall be Class 1, Group D Atmospheres, UL Listed for specified fuel, 1
         PH., 115 V, hermetically sealed motor windings, thermal overload protection.
         Suitable for exposed outdoor installation.
   9) Pump materials of construction shall be suitable for the fuel pumped as specified.

2. Provide pressure vacuum vent designed to provide normal venting for above ground storage
   tank.
   a. Pressure/vacuum vent opening pressure shall be set below that of the emergency vent
      so that the normal vent relieves first.
   3. Vent pipe and vent shall be in accordance with NFPA 30, NFPA 30A, and UL 142.
   4. Vent pipe sizing shall be not less than 2 IN nominal diameter.

J. Provide tank with clock gauge. Gauge shall be activated by float switch.
   1. Gauge shall be accessible and viewable when the tank is filled.
      a. Gage shall be viewable from 20 to 30 FT minimum.
      b. Orientate gauge facing towards tank load out location.
   2. Provide gauge readout in gallons matching tank configuration and size.
   3. Gauge float and cable shall be stainless steel.
   4. Gauge shall have vapor tight seals to prevent condensation from fogging the viewing glass.
   5. Furnish each tank with 2 copies of calibrated charts which indicate the liquid contents in
      gallons for each 1/8 IN of tank depth.

K. Adapters, couplers and accessories shall include but not be limited to locking ball valve and
   check valve.
   1. Provide bronze adapter fitted with a Buna-N or Viton gasket in the API standard 4 IN size.
      a. Adapter shall be a top seal adapter and with a tight-fit connection to prevent vapor
         emissions during filling.
      b. Provide adapter with a locking cap.
         1) The cap shall mate with the adapter and have a latching mechanism which provides
            a water tight seal.
         2) The cap shall provide some type of locking provision and be easily attachable and
            removable.
   2. Provide a UL listed locking full port ball valve for product fill line.
      a. Ball valve: Forged brass body, chrome plated ball, blowout proof stem, Teflon seals,
         and carbon steel handle.
   3. Provide a swing check valve for product fill line.
      a. Check valves shall be constructed for use with fuel type as specified.
L. Tank Fill Spill Container:
   1. Provide a UL listed tank mounted spill container with tank for use during tank filling operations.
   2. 12 gage powder coated steel construction or stainless steel.
   3. Minimum capacity of 15 GAL.
   4. Container shall be tank mounted, lockable lid, and a 1-1/2 IN drain with lockable ball valve.

M. Fuel Discharge Line Accessories:
   1. External Emergency Valve:
      a. Provide an external emergency valve in product discharge line.
      b. Valve shall have a fusible link. Valve shall activate and stop flow in the event of a fire.
   2. Expansion Relief Valve:
      a. Provide an expansion relief valve in each product discharge line.
      b. Valve shall be used for relief of excess pressure, product shall return back to storage tank.

N. Monitoring systems shall include but not be limited to a leak detection system and electronic monitoring system panel complete with all necessary components.
   1. The interstitial space of the tank shall be continuously and automatically monitored to detect breaches in the integrity of the primary tank and the exterior shell.
   2. The interstitial space shall be monitored by a visual leak detector.
      a. Leak gauge shall be easily removed from the tank.
      b. Leak gauge shall have ability to add audible alarm (alarm not required for initial installation).
      c. Ensure leak gauge rod length meets manufacturer’s recommended length for provided tank depth and interstitial monitoring opening size.

O. An emergency fuel shut –off station shall be provided as required.
   1. Provide easily accessible emergency switch within 100 FT, but not closer than 20 FT of dispenser for emergency power shut-off.

P. Diesel fuel above grade piping:
   1. Aboveground pipe shall be single wall Schedule 40 black steel pipe in accordance with ASTM A53 with standard 150 LB fittings, threaded, butt welded, socket welded or flanged.
      a. Butt-welded fittings shall comply with ASME B16.11, forged steel construction.
      b. Socket-welded fittings shall comply with ASME B16.11, forged steel construction.
      c. Flanges and flanged fittings shall comply with ASME B16.5.
         1) Gaskets shall be compatible with diesel fuel up to B20, Garlock, Gylon Style 3500 or equivalent.
      d. Exposed piping shall be painted.
         1) Modified Polyamidoamine Epoxy Primes with Modified Polyamidoamine Epoxy or Acrylic Polyurethane Enamel Top Coats.
            a) Prime coat = Tnemec Series 135 Chembuild VOC=1.90(Modified Polyamidoamine Epoxy), 1 coat, 5 mils.
            b) Final coat= Tnemec Series 75 Endura-Shield (Aliphatic VOC=2.53, Acrylic Polyurethane namel) 1 coat, 3 mils.
      2. A flexible single wall braided stainless steel hose shall be used at the outlet of the pump.
         a. Hose shall be rated for 150 PSI minimum.
         b. Hose shall be compatible with fuels to be pumped.

Q. Fire extinguishers:
   1. Provide a minimum of one (1) fire extinguisher per IFC 2205.5.
      a. Minimum rating of 2-A: 20-B: C per IFC 2205.5.
      b. Locate extinguisher as shown on Drawings or as directed by Owner.

R. Warning signs:
   1. Provide warning signs per IFC 2205.6 & IFC 2204.3.5.
2.5 FINISHES

A. General Requirements:
   1. Ship, store, and handle coating materials as well as apply and cure coatings in accordance
      with SSPC PA 1.

B. Above Grade Fuel Service Piping:
   1. Coat the exterior of above ground carbon steel piping, flanges, fittings, nuts, bolts, washers,
      and piping components per manufacturer's recommendations for the service intended.
   2. Do not coat stainless steel piping, flanges, fittings, or other components.
   3. Do not coat piping components provided with a complete factory coating.
      a. Prior to any coating, clean surfaces to remove dust, dirt, rust, oil, and grease.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The fuel storage system must be installed by or under the supervision of a licensed motor fuel
   tank installer.

B. The installation of the aboveground motor fuel system and piping must comply with the

C. Handle storage tanks with extreme care to prevent damage during placement and install in
   accordance with the manufacturer's installation instructions and NFPA 30 or NFPA 30A, as
   applicable.

D. Inspect the exterior surface of each tank for obvious visual damage prior to the placement of
   each storage tank.

E. Correct surface damage to a storage tank according manufacturer's requirements before
   proceeding with the system installation.

F. General Locations and Arrangements:
   1. Drawings (plans, schematics, and diagrams) indicate the general location and arrangement
      of the piping systems.
   2. Final location and arrangement of piping layout shall take into consideration pipe sizing and
      friction loss, expansion, pump sizing, and other design considerations.

G. Piping:
   1. Thoroughly clean pipe of all scale and foreign matter before the piping is assembled.
   2. Cut pipe accurately to measurements established at the jobsite, and worked into place
      without springing or forcing. Cut pipe square and have burrs removed by reaming.
   3. Install pipe to permit free expansion and contraction without causing damage to the building
      structure, pipe, joints, or hangers.
   4. Use reducing fittings for changes in pipe sizes.
   5. Install equipment and piping into space allotted and allow adequate acceptable clearances
      for installation, replacement, entry, servicing, and maintenance.
   6. Provide electric isolation fittings between dissimilar metals.
   7. Install piping straight and true to bear evenly on supports.
   8. Piping shall be free of sags and traps, shall not be embedded in concrete pavement, and shall
      drain as indicated.
   9. Make changes in direction with fittings. Mitering or notching pipe or other similar
      construction to form elbows or tees will not be permitted.
   10. When work is not in progress, securely close open ends of pipe and fittings with an
      expandable pipe plug so that water, earth, or other substances cannot enter the pipe or
      fittings.
H. Handle storage tanks with extreme care to prevent damage during placement and install in accordance with the manufacturer's installation instructions and NFPA 30 or NFPA 30A, as applicable.

I. Inspect the exterior surface of each tank for obvious visual damage prior to the placement of each storage tank.
   1. Correct surface damage to a storage tank according manufacturer's requirements before proceeding with the system installation.

J. Field Painting:
   1. Painting required for surfaces not otherwise specified, and finish painting of items only primed at the factory, shall be painted and have identification markings applied as specified in Contract Documents.

3.2 FLUSHER, CLEANING, AND ADJUSTING

A. Prior to system performance testing, the following cleaning and adjustments shall be performed per manufacturer's recommendations.
   1. Initial System Cleaning:
      a. Visually inspect and clean free of debris the interior of each fuel storage tank before filling.
      b. In the event of entry into a storage tank, the Contractor shall ensure a safe atmosphere exists.
      c. Contractor shall remove all preservatives and foreign matter from valves, line strainers, pumps, and other equipment coming in contact with fuel.
      d. No fuel will be delivered to the system until the Contractor has satisfactorily completed this initial system cleaning.
   2. Initial System Adjustments:
      a. Each system component shall be initially adjusted, if necessary, to meet the system's final operational requirements.
      b. The Owner will deliver enough fuel to the storage tanks to enable the Contractor to make final adjustments to equipment and controls.
      c. The sequence of control for each component shall be adjusted to meet the indicated system requirements.
      d. Following the initial system adjustments, the equipment tests shall be performed in order to determine any necessary final system adjustments.
   3. Dispensing Unit Flushing:
      a. Fuel shall be pumped at the system's maximum design flow rate from a storage tank through the fuel supply piping, to the corresponding dispensing unit.
      b. Periodic samples for inspection by the Owner shall be taken during the flushing procedure.
         1) A minimum of 10 GAL shall be flushed through the dispensing unit's nozzle or until acceptable to Owner
         2) Disposition of the fuel removed from the system shall be the responsibility of the Contractor.
   4. Following the flushing and cleaning operations, each system component shall be initially adjusted, if necessary, to meet the system's final operational requirements.
   5. Disposal of Initial Fuel Supply:
      a. In the event the fuel contained in the piping system at the conclusion of the flushing operation is not considered by the Owner to be of satisfactory quality for the desired use, the Contractor shall be responsible for pumping out the entire fuel supply from the storage tank and the piping system.
      b. Disposition of the fuel removed from the system shall be the responsibility of the Contractor.
3.3 TESTS

A. Piping Tests:
   1. Furnish labor, materials, equipment, electricity, repairs, and retesting necessary for any of
      the tests required herein.
   2. Perform piping test in accordance with the applicable requirements of ASME B31.3 except
      as modified herein.
   3. Where piping sections terminate at flanged valve points, close the line by means of blind
      flanges in lieu of relying on the valve.
   4. Provide tapped flanges to allow a direct connection between the piping and the air
      compressor and/or pressurizing pump. Use tapped flanges for gauge connections. Taps in
      the permanent line will not be permitted. Gauges will be subject to testing and approval.
   5. Provide provisions to prevent displacement of the piping during testing.
   6. Keep personnel clear of the piping during pneumatic testing. Only authorized personnel
      shall be permitted in the area during pneumatic and hydrostatic testing.
   7. Isolate equipment such as pumps, tanks, and meters from the piping system during the
      testing.
   8. Do not exceed the pressure rating of any component in the piping system during the testing.
   9. Following satisfactory completion of each test, relieve the test pressure and seal the pipe
      immediately.
  10. Preliminary Pneumatic Test:
      a. Apply a 25 PSIG pneumatic test to product piping. Maintain the pressure while
         soapsuds or equivalent materials are applied to the exterior of the piping. While
         applying the soapsuds, visually inspect the entire run of piping, including the bottom
         surfaces, for leaks (bubble formations).
      b. If leaks are discovered, repair the leaks accordingly and retest.
  11. Final Pneumatic Test:
      a. Following the preliminary pneumatic test, apply a 50 PSIG pneumatic test to all product
         piping and hold for a period not less than 2 HRS. During the test period, there shall be
         no drop in pressure in the pipe greater than that allowed for thermal expansion and
         contraction. Disconnect the pressure source during the final test period.
      b. If leaks are discovered, repair the leaks accordingly and retest.

B. Above Ground Storage Tank Tightness Tests:
   1. Perform tightness tests on each above ground storage tank prior to making piping
      connections.
   2. Perform testing in accordance with STI 700-50-5007 except as modified herein.
   3. Tests shall be capable of detecting a 0.1 GPH leak rate from any portion of the tank while
      accounting for effects of thermal expansion or contraction.
   4. Gauges used to monitor the tests shall have a scale with a maximum limit of 10 PSIG.
   5. Repair leaks discovered during the tightness tests in accordance with tank manufacturer’s
      instructions.
   6. Pneumatically pressurize test primary tank compartment to 5 PSIG and monitored for a drop
      in pressure over a 2 HR period during which there shall be no drop in pressure in the tank
      greater than that allowed for pressure variations due to thermal effects.
      a. Pneumatic test the annual space at 3 PSIG.
   7. Following any repair, re-test the tank until the tank successfully passes the testing
      requirements of this paragraph.

C. Manufacturer's Tank Tests:
   1. Following the tank tightness test, leak test each storage tank in accordance with the
      manufacturer's written test procedure if the manufacturer's test procedure is different from
      the tightness tests already performed.
   2. Any test failure shall require corrective action and retest.
D. System Performance Tests:
   1. After all components of the system have been properly adjusted, test the system to
demonstrate that the system meets the performance requirements for which it was designed.
   2. Test the maximum rated capacity of the system by using several tank trucks simultaneously,
if applicable.
      a. The use of tank trucks shall be coordinated with the Owner prior to testing.
   3. If any portion of the system or any piece of equipment fails to pass the tests, the Contractor
shall make the necessary repairs or adjustments and the test shall be repeated until
satisfactory performance is obtained from the Owner.
   4. The tests shall demonstrate the following:
      a. The capability of fuel pump to deliver the indicated flow of fuel.
      b. The alarm and control panels are operational and perform as designed.
      c. Fuel meter is operating accurately.
      d. Vent piping is clear of debris and each pressure/vacuum relief vent is operating
         properly.
      e. Dispensing unit is operational and perform as designed.
      f. Each safety device works properly and is tested per NFPA requirements as necessary.

E. High Liquid Level Alarm Test:
   1. Each storage tank shall be initially overfilled with the appropriate product in order to verify
the high liquid level alarms in the remote alarm panel function as designed.
   2. The initial overfill shall also verify that the storage tank overfill protection.

3.4 TRAINING
A. Contractor shall conduct a training course for the operating staff as designated by the Owner.
   1. The training period shall consist of a total of at least 2 HRS of normal working time and
shall start after the system is functionally completed but prior to final system acceptance.
   2. The field instructions shall cover all of the items contained in the operation and maintenance
manuals as well as demonstrations of routine maintenance operations.

END OF SECTION