

REPAIRS TO THE TERMINAL G&H WAREHOUSE

Project Manual

prepared for

JACKSON COUNTY PORT AUTHORITY



VOLUME 1 – SPECIFICATIONS

PREPARED BY:



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REV A – ISSUED FOR BID (01/05/22)

221-071

JACKSON COUNTY PORT AUTHORITY
PROJECT MANUAL
FOR
REPAIRS TO THE TERMINAL G&H WAREHOUSE

* * *

CONSISTING OF:
BIDDING REQUIREMENTS
CONTRACT FORMS
CONDITIONS OF THE CONTRACT
SPECIFICATIONS

* * *



VOLUME 1 – SPECIFICATIONS
REV. A – ISSUED FOR BID (01/05/22)

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COMPTON ENGINEERING, INC.
PASCAGOULA, MISSISSIPPI

REPAIRS TO THE TERMINAL G&H WAREHOUSE

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SECTION 00090
ADVERTISEMENT FOR BIDS

NOTICE: Bidders

Sealed Bids will be received by the Jackson County Port Authority at 3033 Pascagoula Street, Pascagoula, Mississippi 39567 **until 2:00 P.M., Tuesday, February 8, 2022**, and shortly thereafter opened and read for:

REPAIRS TO THE TERMINAL G&H WAREHOUSE

Project Manuals may be examined at the office of the Design Engineer, Compton Engineering, Inc., 1969 Market Street in Pascagoula or online at www.comptonengineeringplans.com. The bid documents are being made available online via original paper copy or compact disc upon payment of **\$150.00 per paper copy** and **\$50.00 per compact disc**. Cost includes shipping and handling for each set. The bid documents are non-refundable and must be purchased through the website. Return of documents is not required. All plan holders are required to have a valid email address for online registration. For information regarding website registration and online orders please contact Plan House Printing at 662-407-0193. For information regarding this project, contact Compton Engineering's office at 228-762-3970 in Pascagoula, Mississippi.

Bid documents can be downloaded from Central Bidding at www.centralbidding.com. Electronic bids can be submitted at www.centralbidding.com. For any questions relating to the electronic bidding process, please call Central Bidding at 225-810-4814.

The right is reserved by the Owner to reject any or all bids, to waive any informalities, and to award the Contract to serve the best interest of Owner.

JACKSON COUNTY PORT AUTHORITY

By: Charles M. Persons, President

Date: December 14, 2021

Publish in the Mississippi Press

on 01/05/22 and 01/12/22.

PLEASE FORWARD PROOF OF PUBLICATION AND BILL TO JACKSON COUNTY PORT AUTHORITY.

SECTION 00100
INVITATION TO BID

Notice is hereby given that sealed bids will be received by the Jackson County Port Authority until 2:00 P.M. on Tuesday, February 8, 2022, and said bids are to be opened and read aloud in the Jackson County Port Authority's Meeting Room located at 3033 Pascagoula Street, Pascagoula, MS 39567.

Envelopes containing the bid must be sealed, addressed to the Jackson County Port Authority, and designated as bids for the following items described, to wit:

REPAIRS TO THE TERMINAL G&H WAREHOUSE

Any bids received after the time and date specified will not be considered and will be returned unopened.

All bids shall be submitted in a sealed envelope addressed to the Jackson County Port Authority "Port". If a bid is submitted by mail, the post office address of the Port is P.O. Box 70, Pascagoula, MS 39568-0070. Bids may be delivered to the Port at 3033 Pascagoula Street, Pascagoula, MS 39567.

All bid envelopes shall be marked "SEALED BID REPAIRS TO TERMINAL G & H FOR THE PORT OF PASCAGOULA TO BE OPENED AT 2:00 P.M., TUESDAY, FEBRUARY 8, 2022" on the outside of the envelope.

LOCATION AND SPECIFICATIONS

The scope of the Project generally consists of replacing deteriorated purlins, girts, trim, wall and roof panels, repairing column bases, providing gutters and downspouts, and re-coating the roof of the approximately 172,000 SF warehouse. The Project also includes alternates to coat the secondary and primary metal building components.

Project Manuals may be examined at the office of Compton Engineering, Inc., 1969 Market Street in Pascagoula, or online at www.comptonengineeringplans.com. The bid documents are being made available online via original paper copy or compact disc upon payment of **\$150.00 per paper copy** and **\$50.00 per compact disc**. The drawings bound in the bid documents are photographic reductions of the original tracings. Cost includes shipping and handling for each set. The bid documents are non-refundable and must be purchased through the website. Return of documents is not required. All plan holders are required to have a valid email address for online registration. For information regarding website registration and online orders, please contact Plan House Printing at 662-407-0193. For information regarding this project, contact Compton Engineering's office at 228-762-3970 in Pascagoula, Mississippi.

Bid documents can be downloaded from Central Bidding at www.centralbidding.com. Electronic bids can be submitted at www.centralbidding.com. For any questions relating to the electronic bidding process, please call Central Bidding at 225-810-4814.

Each bid must be submitted in accordance with Article 15 of the Instructions to Bidders on the prescribed form and accompanied by cash, a certified check, a cashier's check or bid bond executed on the prescribed form, payable to the Jackson County Port Authority in an amount not less than 5 percent of the amount bid.

The successful bidder will be required to furnish the necessary additional bond(s) for the faithful performance of the Contract, as prescribed in the Contract Documents. All bid bonds, performance bond, payment bond and certificates of insurance shall be either executed by or countersigned by a licensed agent of the surety or insurance company having his place of business in the State of Mississippi and in all ways complying with the insurance laws of the State of Mississippi. Further, the said surety or insurance company shall be duly licensed and qualified to do business in the State of Mississippi.

In order to perform public work, the successful bidder shall, as applicable, hold or obtain such Contractor's and business licenses as required by state statutes. Bidder is required by Mississippi Statute 31-3-21 to have a current Certificate of Responsibility issued by the State Board of Public Contractors prior to bidding on the project.

Before a Contract will be awarded for the work contemplated herein, the Owner will conduct investigation as is necessary to determine the performance record and ability of the apparent lowest responsible responsive qualified bidder to perform the size and type of work specified under this Contract. Upon request, the bidder shall submit such information as deemed necessary by the Owner to evaluate the bidder's qualifications.

For information concerning the proposed work, contact Compton Engineering, Inc., at (228) 762-3970.

It is called to the attention of the Bidder that the time of completion of the work under this Contract is the essence of the Contract.

The right is reserved to reject all bids or any bid not conforming to the intent and purpose of the Contract Documents, and to postpone the award of the Contract for a period of time which, however, shall not extend beyond 90 days from the bid opening date.

JACKSON COUNTY PORT AUTHORITY

BY: Charles Persons

TITLE: President

DATE: December 14, 2021

Publish in Mississippi Press Register

Bid Advertising Dates: 01/05/22

01/12/22

Bid Opening Date: 02/08/22

SECTION 00200

INSTRUCTIONS TO BIDDERS

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

GENERAL

The Project Manual is divided into parts, divisions and sections in keeping with accepted industry practice to separate categories of subject matter for convenient reference thereto. Generally, there has been no attempt to divide the Specification sections into Work performed by the various building trades, Work by separate subcontractors, or Work required for separate facilities in the Project.

A general description of the Work to be done is contained in Section 01010 of the Technical Specifications. The Scope is indicated on the accompanying Drawings and specified in applicable parts of these Contract Documents.

A. Where the drawings are reduced in size from the original tracings, the amount of reduction is indicated by a note and/or bar on the drawings.

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 may be examined and where the bidding procedures are to be administered (Compton Engineering, Inc., 1969 Market Street, Pascagoula, Mississippi 39567).

B. *Command Type Sentences*-- Command type sentences are used in the Contract Documents. These refer to and are directed to the Contractor.

C. *Responsive Bidder*-- Any person, firm or corporation submitting a bid for the work contemplated whose bid form is complete and regular, free of exclusions special conditions or unbalanced unit prices and has no alternative bids for any item unless required in the technical specifications.

D. *Responsible Bidder*--Any person, firm or corporation submitting a bid for the work contemplated who maintains a permanent place of business, has adequate plant equipment to do the work properly and within the time limit that is established, and has adequate financial status to meet his obligations contingent to the work.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office. The deposit is not refundable and return of the document is not required.

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 confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, within five days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be requested in writing.

3.02 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS AND SITE CONDITIONS

4.01 *Underground Facilities*

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.02 *Hazardous Environmental Condition*

A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that Engineer has used in preparing the Bidding Documents.

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

4.03 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 conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 4.06 of the General Conditions.

4.04 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.05 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

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

A. examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;

B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

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

D. obtain and carefully study (or accept consequences of not doing so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying

any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

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

F agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times 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. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

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

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

4.07 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

5.01 A Pre-Bid Conference has not been scheduled. If required, a pre-bid conference will be scheduled by addendum. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6 - SITE AND OTHER AREAS

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

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 mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

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 and in the form of a certified check or bank money order or a Bid bond (on the form attached) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, Owner may consider Bidder in default, annul the Notice of Award and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 91 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

8.03 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within fourteen days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

9.01 The number of days within which the Work is to be substantially completed and ready for final payment is set forth in the Bid Form.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, are set forth in the Contract.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, provision for providing the substitutes will be included in the Bid.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

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

12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 13 - PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

13.02 All blanks on the Bid Form shall be completed by printing in ink or by typewriter and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternative, and unit price item listed therein. In the case of optional alternatives, the words "No Bid," "No Change," or "Not Applicable" may be entered.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 - BASIS OF BID; COMPARISON OF BIDS

14.01 *Lump Sum*

A. Where prices are requested to be submitted as a lump sum, Bidders shall submit a Bid on a lump sum basis as set forth in the Bid Form. Where alternates are included, the Bidder shall submit prices per each alternate. Owner may select any combination of Base Bids and alternates in order to determine the lowest and best bid.

14.02 *Unit Price*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.
- D. The Owner reserves the right to increase or decrease the amount of any class of unit price work that may be deemed necessary. No minimum or maximum quantity for any bid item is guaranteed by the Owner.

14.03 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 11.02.B of the General Conditions.

14.04 If Contractor is to bid the time of completion, Bid prices will be compared after adjusting for differences in the time designated by Bidders for Substantial Completion. The adjusting amount will be determined at the rate set forth in the Contract Documents for liquidated damages for failing to achieve Substantial Completion for each day before or after the desired date appearing in Article 9.

ARTICLE 15 - SUBMITTAL OF BID

15.01 With each copy of the Bidding Documents, a Bidder is furnished one bound copy of the Bid Form, and, the Bid Bond Form. A copy of the Bid Form is to be completed and submitted with the Bid security and the data listed in Article 7 of the Bid Form.

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in a sealed envelope plainly marked 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 envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed as stated in the Notice to Bidders or Advertisement to Bid.

15.03 Any bid submitted by a nonresident contractor which does not include the nonresident contractor's current state law shall be rejected and not considered for award. If the state does not have a preference law, then the contractor shall submit a letter stating such from an officer of the court.

15.04 In order to perform public work, the successful bidder shall, as applicable, hold or obtain such Contractor's and business licenses as required by state statutes. Bidder is required by Mississippi Statute 31-3-21 to have a current Certificate of Responsibility issued by the State Board of Public Contractors prior to bidding on the project. The bidder shall include his Certificate of Responsibility Number or a statement that the Bid herein is less than \$50,000 on the outside of the envelope, failing which, said Bid shall not be opened or considered.

15.05 The Owner will confirm the validity of the Bidder's Contractor's License Number prior to opening the bid. This will be accomplished by using the Board of Public Contractor's Website located at <http://www.msbcoc.us/contractors.cfm>. It shall be the Bidder's responsibility to insure his License Number appears on the site. If the number does not appear, the bid will be returned unopened, regardless of whether or not the number was valid at the time of the bid opening.

15.06 When Bids are submitted electronically, the same requirements under Article 15.01 through 15.05 shall apply.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the 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.

16.02 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 re-bid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

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

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 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 prior to the Notice of Award.

19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

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

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

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

ARTICLE 21 - SIGNING OF AGREEMENT

21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 10 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22 - SALES AND USE TAXES

22.01 The Contractor may be subject to a Contractor's Tax in the state where the project is located. If applicable, all Contractors' taxes shall be included in the Bid.

ARTICLE 23 - RETAINAGE

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

ARTICLE 24 – CONTRACTS TO BE ASSIGNED

Not included.

ARTICLE 25 - PARTNERING

Not included.

SECTION 00410
BID FORM

NOTE: Use preferably black ink for completing this Bid form.

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted for:

Repairs to the Terminal G&H Warehouse

1.02 This Bid is submitted to:

**Jackson County Port Authority
3033 Pascagoula Street
Pascagoula, Mississippi 39567**

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

1.04 The company and person to contact for additional information regarding this Bid:

COMPANY NAME: _____
CONTACT: _____
TITLE: _____
TELEPHONE: _____

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 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

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

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

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

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-4.02 as containing reliable “technical data” and, (2) reports and drawings of Hazardous Environmental Conditions, if any, at the site that have been identified in SC-4.06 as containing reliable “technical data”.

- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times 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 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 of the Work for which this Bid is submitted.

ARTICLE 4 – FURTHER REPRESENTATIONS

4.01 Bidder further represents that:

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

ARTICLE 5 – BASIS OF BID

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

BASE BID – REPAIRS TO THE TERMINAL G&H WAREHOUSE					
Item #	Description	Units	Qty.	Unit Price	Amount
1	Mobilization/Demobilization	LS	1		
2	Owner Contingencies	LS	1	\$200,000	\$200,000
3	Remove/Replace Deteriorated Metal Roof Panels	SQ	22		
4	Remove and Replace Metal Rake Trim	LF	40		
5	Remove and Replace Metal Rake Eave Trim	LF	435		
6	Remove/Replace Deteriorated/Missing Purlins and Eave Struts	LF	2,900		
7	Remove and Replace Deteriorated/Missing Girts	LF	2,200		
8	Provide Gutter along South Wall	LF	435		
9	Provide Downspouts along South Wall	EA	19		
10	Structural Repairs to Deteriorated and Structurally Deficient Column Base Plates, Anchor Bolts, and Concrete Pedestals (including Primer Coat)	EA	19		
11	Repair/Replace Cross-bracing between frames	EA	10		
12	Type A Column Base: Structural Repairs to Deteriorated and Structurally Deficient Column Base Plates, Anchor Bolts, and Concrete Pedestals	EA	1		
13	Type B Column Base: Structural Repairs to Deteriorated and Structurally Deficient Column Base Plates, Anchor Bolts, and Concrete Pedestals	EA	26		
14	Provide Flange Support on Column to Attach Girts	EA	13		
15	American Weatherstar System on all New Materials.	SQ	22		
16	American Weatherstar System on all Existing Materials/Coating	SQ	1,727		
17	Prepare and Paint Underside of all Existing Roof Panel Deteriorated Seams	LF	6,960		
TOTAL BASE BID (TO BE READ ALOUD):					

ALTERNATE NO. 1					
Item #	Description	Units	Qty.	Unit Price	Amount
Alternate 1	Prepare and Paint all Roof Secondary Steel	SF	174,870		
TOTAL ALTERNATE NO. 1 (TO BE READ ALOUD):					

ALTERNATE NO. 2					
Item #	Description	Units	Qty.	Unit Price	Amount
Alternate 2	Prepare and Paint all Wall Secondary Steel	SF	19,795		
TOTAL ALTERNATE NO. 2 (TO BE READ ALOUD):					

ALTERNATE NO. 3					
Item #	Description	Units	Qty.	Unit Price	Amount
Alternate 3	Prepare and Paint all Primary Steel Frames	LF	7,638		
TOTAL ALTERNATE NO. 3 (TO BE READ ALOUD):					

ALTERNATE NO. 4					
Item #	Description	Units	Qty.	Unit Price	Amount
Alternate 4	Remobilization Due to Restricted Access	EA	3		
TOTAL ALTERNATE NO. 4 (TO BE READ ALOUD):					

Unit prices have been computed in accordance with Paragraph 11.03.B of the General Conditions. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents. No minimum or maximum quantities are guaranteed by the Owner.

The Owner reserves the right to award a Contract for the base bid and one, all or any combination of alternates to the lowest, responsible, responsive, qualified bidder. The Owner will adjust the final contract amount by utilizing any combination of the Bid Schedules and Alternate to adjust the scope of work for the available funds for the project.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete, and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before the dates or within the number of calendar days included in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.
- 6.03 Submittals required under this Contract that would affect the start of actual construction can be submitted by the Engineer/Contractor any time after the Owner issued the Notice of Award, notwithstanding the fact that the Contract has not been executed nor the Notice-To-Proceed issued. Notwithstanding the Engineer/Contractor's right to make early submittals, No cause for a delay or time extension shall arise under the Contract unless the owner fails to respond to such submittals within 20 days after issuance of the Notice-to-Proceed and the delay impacts the Contract completion date. The time for completion of this Contract shall begin on the day the Notice-to-Proceed is issued by the Owner.
- 6.04 In the event the Bidder is awarded the Contract and shall fail to complete the work within the time limit or extended time limit agreed upon, as more particularly set forth in the Contract Documents, liquidated damages shall be paid to the Owner at the rate per calendar day as stated in the Contract until the work shall have been satisfactorily completed as provided by the Contract Documents.
- 6.05 Calculations for the specified liquidated damage amounts are on the file with the Engineer and available for review upon request.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are attached to and made a condition of this Bid:
- A. Required Bid security in the form of Bid Bond, Section 00430.
 - B. Evidence of Authority to Execute.

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BIDDER’S SIGNATURE AND SWORN STATEMENT

STATE OF _____

COUNTY OF _____

BIDDER

9.01 The name of the bidder submitting this proposal is:

Headquarters Address:

_____ Street

_____ City State Zip

_____ Phone Fax

_____ Email

Local Mailing Address (if different than above):

_____ Street

_____ City State Zip

Address to which all communications concerned with this Bid and with the resulting Contract shall be sent:

_____ Name Street or P.O. Box

_____ City State Zip

Attention: _____

Name Title

Submitted on _____, 20____.

State Contractor License No. _____ (If applicable)

9.02 Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner – attach evidence of authority to sign)

First Partner Name (typed or printed): _____

Address: _____

Second Partner Name (typed or printed): _____

Address: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

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

By: _____
(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest: _____
(Signature of Corporate Secretary)

Date of Qualification to do business in _____ *[State Where Project is Located]* is
____________.

A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of first joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of second joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

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

9.03 I (Bidder) have examined and prepared the foregoing Bid(s) based on the information contained in the Project Manual provided with the Bid; that I have checked the same in detail before submitting this Bid; that I have full authority to make such statements and submit this Bid in (its) (their) (my) behalf; and that these statements are true and correct.

Signature: _____

Title: _____ (Corporate Seal)

NOTARY PUBLIC:

Subscribe and sworn to before me this ____ day of _____, 20__.

Notary Public – State of _____

My Commission expires _____ (Notary Seal).

SECTION 00430
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)*:

Jackson County Port Authority
P.O. Box 70
Pascagoula, MS 39568-0070

BID

Bid Due Date:

Description *(Project Name and Include Location)*:

Repairs to the Terminal G&H Warehouse

BOND

Bond Number:

Date *(Not earlier than Bid due date)*:

Penal sum

_____ (Words)

\$

_____ (Figures)

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

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power 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 00510
NOTICE OF AWARD**

Dated: _____

Project: Repairs to the Terminal G&H Warehouse	Owner: Jackson County Port Authority	Contract No.:
Contract: Repairs to the Terminal G&H Warehouse		Engineer's Project No.: 221-071
Bidder:		

Bidder's Address: (send Certified Mail, Return Receipt Requested)

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

Repairs to the Terminal G&H Warehouse

The Contract Price of your Contract is

_____ (\$_____).

Three (3) copies of each of the proposed Contract Documents accompany this Notice of Award.

You must comply with the following conditions precedent within ten (10) days of the date you receive this Notice of Award.

1. Deliver to the Owner three (3) fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security bonds and certificates of insurance, three (3) fully executed originals as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.03).

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

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

Jackson County Port Authority, Owner

By: _____
Authorized Signature

Title

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by _____ this the _____ day of _____, 20__.

By: _____

Title: _____

SECTION 00520 CONTRACT

THIS AGREEMENT is by and between JACKSON COUNTY PORT AUTHORITY

(Owner) and _____

(Contractor).

Owner and Contractor, in consideration of the mutual covenants set forth herein, 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:

The scope of the Project generally consists of replacing deteriorated purlins, girts, trim, wall and roof panels, repairing column bases, providing gutters and downspouts, and re-coating the roof of the approximately 172,000 SF warehouse. The Project also includes alternates to coat the secondary and primary metal building components.

ARTICLE 2 - THE PROJECT

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

Repairs to the Terminal G&H Warehouse

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by:

**Compton Engineering, Inc.
1969 Market Street
Pascagoula, MS 39567**

(Engineer), who is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of the Essence

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

4.02 Days to Achieve Substantial Completion and Final Payment

A. The Work will be substantially completed within **120 days** after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within **150 days** after the date when the Contract Times commence to run.

4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner **\$442.00** for each day that expires after the time specified in Paragraph 4.02

for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$273.00 for each day that expires after the time specified in Paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 - CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined below:

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

As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 9.07 of the General Conditions. Unit prices have been computed as provided in Paragraph 11.03 of the General Conditions.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

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

6.02 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment in accordance with Article 14 of the General Conditions during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:

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

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

6.03 Final Payment

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

ARTICLE 7 - INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate specified by Mississippi State Law.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

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

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

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

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph SC-4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph SC-4.06 of the Supplementary Conditions as containing reliable "technical data."

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

F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

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.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 6, inclusive).
2. Performance bond (pages 1 to 2, inclusive).
3. Payment bond (pages 1 to 2, inclusive).
4. General Conditions (pages 0 to 43, inclusive).
5. Supplementary Conditions (pages 1 to 12, inclusive).
6. Specifications as listed in the table of contents of the Project Manual.
7. The Drawings listed on the sheet index included in or with the Project Manual.
8. Addenda (numbers to , inclusive).

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

- a. Contractor's Bid (pages _ to _, inclusive).
- b. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).
- c. _____.

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

- a. Notice to Proceed (pages 1 to 1, inclusive).
- b. Work Change Directives.
- c. Change Order(s).

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

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

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

10.05 Contractor's Certifications

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

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

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

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

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

10.06 Other Provisions: N/A

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

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

OWNER:

CONTRACTOR:

JACKSON COUNTY PORT AUTHORITY

By: _____

By: _____

Title: _____

Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

P.O. Box 70

Pascagoula, MS 39568-0070

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

License No.: _____
(Where applicable)

Agent for service or process: _____

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

SECTION 00550
NOTICE TO PROCEED

Dated: _____

Project: Repairs to Terminal G&H Warehouse	Owner: Jackson County Port Authority	Contract No.:
Contract: Repairs to Terminal G&H Warehouse		Engineer's Project No.: 221-071

Bidder: _____

Bidder's Address: (send Certified Mail, Return Receipt Requested)

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

Jackson County Port Authority, Owner

By: _____
Authorized Signature

Title

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____ this the _____
day of _____.

By _____

Title _____

SECTION 00610
PERFORMANCE BOND

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

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

*Jackson County Port Authority
P.O. Box 70
Pascagoula, MS 39568-0070*

CONTRACT

Date:

Amount:

Description (Name and Location):

Repairs to the Terminal G&H Warehouse

BOND

Bond Number:

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

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

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)

Name and Title:

SURETY

(Seal)

Surety's Name and Corporate Seal

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

Attest: _____
Signature and Title:

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

2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.

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

3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and

3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and

3.3. Owner has agreed to pay the Balance of the Contract Price to:

1. Surety in accordance with the terms of the Contract;
2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

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

4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or

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

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or

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

1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
2. Deny liability in whole or in part and notify Owner citing reasons therefor.

5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of Surety under Paragraph 4; and

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

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

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

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

10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

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

12. Definitions.

12.1. Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.

12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker
Owner's Representative (engineer or other party)

**SECTION 00615
PAYMENT BOND**

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

CONTRACTOR (Name and Address):

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

OWNER (Name and Address):

*Jackson County Port Authority
P.O. Box 70
Pascagoula, MS 39568-0070*

CONTRACT

Date:
Amount:
Description (Name and Location):

Repairs to the Terminal G&H Warehouse

BOND

Bond Number:
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)
Name and Title:

SURETY

Surety's Name and Corporate Seal (Seal)

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

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL

Company:

Signature: _____ (Seal)
Name and Title:

SURETY

Surety's Name and Corporate Seal (Seal)

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

Attest: _____
Signature and Title:

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of

the Contract, which is incorporated herein by reference.

2. With respect to Owner, this obligation shall be null and void if Contractor:

- 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
 4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2. Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
 5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
 6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:
 - 6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
 - 6.2. Pay or arrange for payment of any undisputed amounts.
 7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
 8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond,

they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.

9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

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

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the 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.

12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

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

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

**FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker:
Owner's Representative (engineer or other party):**

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

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

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*—The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the

Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*—See Paragraph 11.01 for definition.

17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

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

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

21. *General Requirements*—Sections of Division 1 of the Specifications.

22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

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

29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*—Polychlorinated biphenyls.

31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such

as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

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

33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.

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

38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

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

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands

furnished by Owner which are designated for the use of Contractor.

42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

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

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

45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.

46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.

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

48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

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

50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such

construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or *terms* of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to *describe* an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

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

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents; or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
- c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

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

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

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

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

4. When “furnish,” “install,” “perform,” or “provide” is not used in *connection* with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

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

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

2.02 *Copies of Documents*

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

2.03 *Commencement of Contract Times; Notice to Proceed*

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

2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

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

2. a preliminary Schedule of Submittals; and

3. a *preliminary* Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during

performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

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

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

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

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

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

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at *the* time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual, *or* code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field *measurements*. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor *discovers* any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving *Discrepancies*:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions

in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's *written* interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its *consultants*, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other *project* without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

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

3.06 *Electronic Data*

A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the

party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

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

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

4.01 *Availability of Lands*

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

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

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

4.02 *Subsurface and Physical Conditions*

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

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

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

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

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

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

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

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

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

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

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by

Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times,

or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

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

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data;

b. locating all Underground Facilities shown or indicated in the Contract Documents;

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and

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

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly

review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 Reference Points

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

4.06 Hazardous Environmental Condition at Site

A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their

officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

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

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

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

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the *scope* of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) *secure* or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area *until* after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of

such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

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

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

5.02 *Licensed Sureties and Insurers*

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

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, *certificates* of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, *certificates* of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

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

D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect *Contractor*.

E. The insurance *and* insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of *or* result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

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

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

6. include completed operations coverage:

a. Such insurance shall remain in effect for two years after final payment.

b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

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

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;

2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or *Laws* and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or *renewal* refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this *Paragraph 5.06*, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

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

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

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any

property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

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

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and *maintained* by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide

to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, *methods*, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

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

6.02 *Labor; Working Hours*

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

B. Except as otherwise required for the safety or *protection* of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility *for* all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments

will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

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

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

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

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

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

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

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

2. Substitute *Items:*

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,

b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services; and

4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, *technique*, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made *pursuant* to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. *Special Guarantee:* Owner may require Contractor to furnish at *Contractor's* expense a special

performance guarantee or other surety with respect to any substitute.

E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by *Contractor* pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date *indicated* for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

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

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

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

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

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement *between* Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the

Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

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

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

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

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and

licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are *applicable* at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

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

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in *Contract Price* or *Contract Times*. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

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

6.11 *Use of Site and Other Areas*

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

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted

by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

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

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

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

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field

Orders, and written interpretations and clarifications in good order and annotated to show changes made during *construction*. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

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

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

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

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

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

E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to *Engineer* for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as *Engineer* may require.

1. *Shop Drawings:*

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show *Engineer* the services, materials, and equipment Contractor proposes to provide and to enable *Engineer* to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as *Engineer* may require to enable *Engineer* to review the submittal for the limited purposes required by Paragraph 6.17.D.

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

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

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

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

D. *Engineer's Review:*

1. *Engineer* will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to *Engineer*. *Engineer's* review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. *Engineer's* review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. *Engineer's* review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and *Engineer* has given written approval of each such variation by specific written notation

thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

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

6.18 *Continuing the Work*

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

6.19 *Contractor's General Warranty and Guarantee*

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

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

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

2. normal wear and tear under normal usage.

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

1. observations by Engineer;

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

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

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

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

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

7. any correction of defective Work by Owner.

6.20 *Indemnification*

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

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

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

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

6.21 *Delegation of Professional Design Services*

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

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

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

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design

calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so

report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

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

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.

C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

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

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom

Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

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

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

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

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

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

9.02 *Visits to Site*

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

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but

without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

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

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

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

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

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

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

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

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

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

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

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually

performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

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

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part;
2. approve the Claim; or
3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

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

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include,

without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

- a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

- b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers,

which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

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

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

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

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

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

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

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

B. Cash Allowances:

1. Contractor agrees that:

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

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

C. Contingency Allowance:

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

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

11.03 Unit Price Work

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

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. *Determinations* of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

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

D. Owner or Contractor may make a Claim for an adjustment in the *Contract Price* in accordance with Paragraph 10.05 if:

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

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

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

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

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any *Claim* for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be *determined* as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for

overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times *shall* be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a *Claim* is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or *progress* of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the *fault* of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the *control* of Contractor. Delays attributable to and

within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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

13.01 *Notice of Defects*

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

13.02 *Access to Work*

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

13.03 *Tests and Inspections*

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

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be *inspected*, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all

costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the *Work*; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without *written* concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.

F. Uncovering Work as provided in Paragraph 13.03.E *shall* be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be *uncovered* for Engineer's observation and replaced at Contractor's expense.

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

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of *repair* or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

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

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not *defective*. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no *action* that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall

promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

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

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

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended *for* an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The *provisions* of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including

but not limited to *all* fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

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

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such *corrective* or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be

entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work *attributable* to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

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

14.02 *Progress Payments*

A. *Applications for Payments:*

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

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

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

B. *Review of Applications:*

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

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

- a. the Work has progressed to the point indicated;
- b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

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

- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
- b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

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

- a. to supervise, direct, or control the Work, or
- b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
- c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
- d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
- e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to

the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

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

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed

by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

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

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

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

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

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been

identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and *usable* part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

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

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

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

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified

during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

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

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

written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due:*

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

14.08 *Final Completion Delayed*

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

14.09 *Waiver of Claims*

A. The *making* and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The *occurrence* of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's repeated disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a *performance* bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 Owner May Terminate For Convenience

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

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

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus

fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

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

15.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer *fails* to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven *days* after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 Methods and Procedures

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the

American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or

2. agrees with the other party to submit the Claim to another dispute resolution process; or

3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 Giving Notice

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

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times

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

17.03 Cumulative Remedies

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

17.04 Survival of Obligations

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

17.05 Controlling Law

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

17.06 Headings

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

**SUPPLEMENTARY CONDITIONS
OF THE
CONSTRUCTION CONTRACT**

Prepared by

COMPTON ENGINEERING, INC.

for

JACKSON COUNTY PORT AUTHORITY

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SUPPLEMENTARY CONDITIONS

Prepared for Jackson County Port Authority

GENERAL

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. C-700, 2007 Edition) and other provisions of the Contract Documents as indicated below. 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 same meanings stated below, which are applicable to both the singular and plural thereof.

The Contractor's attention is directed to Division 1, GENERAL REQUIREMENTS, which contains other directions pertinent to the project.

SPECIFIC COMMENTS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01.A.19. *Engineer* -- ADD the following language at the end of the last sentence in Paragraph 1.01.A.19:

Wherever in these Contract Documents the word "Engineer" or "E/A" or "A/E" appears, it shall be understood to mean the Engineer, Compton Engineering, Inc., and their authorized representatives, acting either directly or indirectly as authorized agents of the Owner.

SC-1.01.A.29. *Owner* -- ADD the following language at the end of the last sentence in Paragraph 1.01.A.29:

Whenever in these Contract Documents the word "Owner" appears, it shall be understood to mean the Jackson County Port Authority and their authorized representatives.

SC-1.01.A.44. *Substantial Completion* – AMEND the language in the first sentence of Paragraph 1.01.A.44 to read as follows:

CHANGE the language from “in the opinion of Engineer,” to “in the opinion of the Engineer and Owner,”

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 *Copies of Documents* AMEND the language in the first sentence in Paragraph 2.02.A to read as follows:

CHANGE the language from “up to ten” to “up to three unless otherwise noted in Article 4”.

SC-2.03 *Commencement of Contract Times; Notice to Proceed* AMEND the language in the third sentence in Paragraph 2.03.A to read as follows:

CHANGE the language from “later than the sixtieth day” to “later than the ninetieth day”.

SC-2.07 *Initial Acceptance of Schedules* ADD the following new language at the end of Paragraph 2.07.A.2:

The requirements for specification Section 01300 - Submittals During Construction shall also be met prior to accepting the Schedule of Submittals.

SC-2.08 Narrative Report Outline ADD the following new paragraph immediately following Paragraph 2.07:

SC-2.08 A narrative report as outlined in Specification section 01311 shall be required and shall accompany all Payment Applications prior to approval.

SC-2.09 Port Access ADD the following new paragraph immediately following Paragraph 2.08:

SC-2.09 The Jackson County Port Authority public terminals are designated as regulated facilities in accordance with 33 CR 105 and the Maritime Transportation Security Act (MTSA) 2002. A key regulatory feature is that all personnel requiring unescorted access to the facility be in possession of a Transportation Worker Identification Credential (TWIC) card. The contractor shall be familiar with access regulations and shall be responsible for compliance (including their employees, subcontractors, vendors, etc) with all provisions and requirements relative to TWIC guidelines and policies. Contractor agrees that it shall indemnify and be responsible to Port for any non-compliance penalties assessed by applicable federal regulatory agencies (i.e., the United States Coast Guard) resulting from contractors violation of TWIC policies.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.03.B Resolving Discrepancies ADD the following new language at the end of this section:

- c. Whenever the Contract Documents contain contradictions or discrepancies within the document, the most costly means or method shall be applied.

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

SC-4.02 Subsurface and Physical Conditions DELETE Paragraphs and 4.02.B in its entirety and INSERT the following in their place:

- B. Not Used.
- C. Not Used.

SC-4.02.D Site Surveys ADD the following new paragraph immediately after Paragraph 4.02.B:

- D. *Site Surveys:* Site survey information has been compiled from past records and limited field investigations and although stated with as much accuracy as possible, may contain errors or discrepancies. Contractor shall perform investigations as necessary to accomplish the Work. Any unknown item encountered that impacts the Work shall be handled under Article 4.03.

SC-4.05 Reference Points AMEND the language in the second sentence of Paragraph 4.05.A to read as follows:

CHANGE the language from “without prior written approval of Owner” to “without prior written approval of Owner and Engineer”.

SC-4.06 Hazardous Environmental Conditions at Site DELETE Paragraphs 4.06.A and 4.06.B in their entirety and INSERT the following in their place:

- A. Not used.
- B. Not used.

SC-4.07 Site Investigation and Representation ADD the following new paragraph immediately after Paragraph 4.06:

SC-4.07 *Site Investigation and Representation*

The Contractor acknowledges that he has satisfied himself as to the nature and location of the Work; the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials; availability of labor, water, electric power, and roads; uncertainties of weather, river stages, or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during the prosecution of the work; and all other matters which can in any affect the Work or the cost thereof under this Contract. The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface and subsurface materials and groundwater to be encountered from inspecting the site. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the Work. Neither the Owner nor the Engineer assumes responsibility for any conclusion or interpretation made by the Contractor.

ARTICLE 5 – BONDS AND INSURANCE

SC-5.03 Certificates of Insurance ADD the following new paragraph immediately after Paragraph 5.03.E:

- F. The Contractor shall be required to submit a Certificate of Insurance with every pay application; or, no later than every thirty (30) days for the term of Contract. If an approved Certificate of Insurance is not included with the pay application, then it will be considered non-compliant with the Contract Documents and returned to the Contractor.

SC-5.04 Contractor’s Liability Insurance ADD the following new paragraph immediately after Paragraph 5.04.B:

- C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverages for not less than the following amounts or greater where required by Laws and Regulations:
 - 1. Worker’s Compensation, and related coverage under Paragraph 5.04.A.1 and A.2 of the General Conditions:
 - a. State: Statutory
 - b. Applicable Federal: Statutory (e.g. Longshoreman’s)
 - c. Employer’s Liability: \$100,000 or Statutory
 - 2. Contractor’s General Liability under Paragraph 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:
 - a. General Aggregate: \$ 2,000,000.00
 - b. Products- Completed Operations Aggregate \$ 2,000,000.00
 - c. Personal and Advertising Injury \$ 2,000,000.00
 - d. Each Occurrence (Bodily Injury and Property Damage) \$ 2,000,000.00
 - e. Property Damage liability insurance will provide Explosion, Collapse and Under-ground coverages where applicable.

- f. Excess or Umbrella Liability
 - 1) General Aggregate \$ 2,000,000.00
 - 2) Each Occurrence \$ 2,000,000.00
- 3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:
 - a. Bodily Injury:
 - Each Person \$ 2,000,000.00
 - Each Accident \$ 2,000,000.00
 - b. Property Damage:
 - Each Accident \$ 2,000,000.00
 - c. Combined Single:
 - Limit of \$ 2,000,000.00
- 4. The Contractual Liability coverage required by Paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:
 - a. Bodily Injury:
 - Each Person \$ 2,000,000.00
 - Annual Aggregate \$ 2,000,000.00
 - b. Property Damage:
 - Each Accident \$ 2,000,000.00
 - Annual Aggregate \$ 2,000,000.00
- 5. The list of names, other persons, or entities to be included on the policy as additional insured are as per Paragraph 5.11.

SC-5.06.A Property Insurance DELETE Paragraph 5.06.A in its entirety and INSERT the following in its place:

- A. When available, Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof.
 - 1. This insurance shall:
 - a. include the interests of Owner, Contractor, Subcontractors, Engineer and any other individuals or entities identified herein, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
 - b. in addition to the individuals and entities specified, include additional insured per Paragraph 5.11.
 - c. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

- d. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 - e. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 - f. allow for partial utilization of the Work by Owner;
 - g. include testing and startup; and
 - h. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.
2. Contractor shall be responsible for any deductible or self-insured retention.
 3. The policies of insurance required to be purchased and maintained by Contractor in accordance with this Paragraph SC-5.06.A shall comply with the requirements of paragraph 5.06.C of the General Conditions.

SC-5.06.B DELETE this article in its entirety.

SC-5.06.E DELETE this Paragraph in its entirety.

SC-5.11 Additional Insured ADD the following new paragraph immediately after Paragraph 5.10.

SC- 5.11 *Additional Insured*

- A. Where applicable, all insurance policies shall name the Owner and Engineer as herein before defined as additional insured.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITY

SC-6.06 Concerning Subcontractor’s, Suppliers, and Others ADD a new paragraph immediately after Paragraph 6.06.G:

- H. Owner or Engineer may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on Work performed for Contractor by a particular Subcontractor or Supplier.

SC-6.12 Record Documents ADD a new paragraph immediately after Paragraph 6.12.A:

- B. Owner may withhold progress payments until record documents are properly updated. Final payment may not be made until all record documents are accepted in writing by Owner.

SC-6.17 Shop Drawings and Samples ADD the following new paragraphs immediately after Paragraph 6.17.E:

- F. Contractor shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than three submittals. Engineer will record Engineer’s time for reviewing subsequent submittals of Shop Drawings, samples or other items requiring approval and Contractor shall reimburse Owner for Engineer’s charges for such time.
- G. In the event that Contractor requests a substitution for a previously approved item, Contractor shall reimburse Owner for Engineer’s charges for such time unless the need for such substitution is beyond the control of Contractor.

SC-6.19 Contractor's General Warrantee and Guarantee ADD the following new paragraph immediately after Paragraph 6.19.C:

- D. Unless additional warranties are included in the technical specifications, the Contractor shall guarantee all Work for a period of one-year following Substantial Completion.

ARTICLE 7 – OTHER WORK AT SITE

SC-7.04 Claims Between Contractors ADD a new paragraph immediately after Paragraph 7.03:

SC-7.04 Claims Between Contractors

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

ARTICLE 8 – OWNER'S RESPONSIBILITIES

SC-8.11 Evidence of Financial Arrangements Add the following new paragraph immediately after Paragraph 8.11.A:

- B. On request of Contractor prior to the execution of any Change Order involving a significant increase in the Contract Price, Owner shall furnish to Contractor reasonable evidence that adequate financial arrangements have been made by Owner to enable Owner to fulfill the increased financial obligations to be undertaken by Owner as a result of such Change Order.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

SC-9.03 Project Representative AMEND the language in the second sentence of Paragraph 9.03.A to read as follows:

DELETE the language "the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in".

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

SC-10.05.C Item 1, REPLACE “deny” with “recommend denial of”. Item 2, REPLACE “approve” with “recommend approval of”.

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

SC-11.03.D DELETE Paragraph 11.03.D in its entirety and INSERT the following in its place:

- D. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
1. if the Bid price of a particular item of Unit Price Work amounts to five percent (5%) or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than twenty-five percent (25%) 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 or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT ITEMS

No Comment.

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

SC-13.03.A ADD the following new sentence immediately after the first sentence of Paragraph 13.03.A:

Timely notice shall be as stated in the appropriate specification and no less than 24 hours prior to scheduling the Work.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

SC-14.02.A.1 *Application for Payments* AMEND the language in the first sentence of Paragraph 14.02.A.1 to read as follows:

CHANGE the language from “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 accompanied by such supporting documentation as is required by the Contract Documents. “ to “On or before the 20th 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 by the 15th of that month, accompanied by such supporting documentation as is required by the Contract Documents.”

SC-14.02.A.3 *Application for Payments* DELETE Paragraph 14.02.A.3 in its entirety and INSERT the following in its place:

3. The Owner will retain 5% of the Contract amount of each estimate until final completion of the project. On monthly estimates subsequent to the first estimate submitted that includes invoices for stored materials for which payment to the Contractor has been made, there shall be a signed statement that the invoices have been paid by the Contractor.

The statement shall read as follows:

This is to certify that payment has been made for invoiced materials included in previous monthly estimate no. _____ thru _____.

Signed: _____

In the event that such statement is not furnished or the manufacturers or material suppliers notify the Owner in writing that they have not been paid for materials included on previous estimates, the Owner may reduce payment in accordance with Paragraph 14.02.

SC-14.02.C *Payment Becomes Due* AMEND the language in the first sentence of Paragraph 14.02.C.1 to read as follows:

CHANGE the language from “Ten days after presentation of the Application for Payment to Owner,” to “Forty-five days after approval of the Application for Payment by Owner”.

SC-14.07.C.1 *Payment Becomes Due* AMEND the language in the first sentence of Paragraph 14.07.C.1 to read as follows:

CHANGE the language from “Thirty days” to “Sixty days”

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

No comment.

ARTICLE 16 – DISPUTE RESOLUTION

SC-16.01 Delete Paragraph 16.01 in its entirety and insert the following in its place:

SC-16.01 Meet to Confer and Negotiate

- A. Engineer’s action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after receipt of written notice of Engineer’s action or decision unless, within that time period, Owner or Contractor gives to the other party written notice of intent to submit the Claim to a process of bilateral negotiations as set forth below.
- B. Within 30 days of the delivery of such notice, Owner and Contractor shall meet and confer regarding the Claim. A good-faith effort to negotiate resolution shall be made by both parties.
- C. If the negotiations contemplated by Paragraph SC-16.01.B are unsuccessful, management representatives of Owner and Contractor at least one tier above the individuals who met under SC-16.01.B shall meet, confer, and negotiate within 30 days of the closure of the unsuccessful negotiations.
- D. If the Claim is not resolved by negotiation, Engineer’s action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the negotiations unless, within that time period, Owner or Contractor:
 1. gives to the other party written notice of intent to submit the Claim to a court of competent jurisdiction, or
 2. agrees with the other party to submit the Claim to another dispute resolution process.

- E. Notwithstanding any applicable statute of limitations, a party giving notice under Paragraph SC-16.01.D.1 shall commence an action on the Claim within one year of giving such notice. Failure to do so shall result in the Claim being time-barred and Engineer's action or denial shall become final and binding.

ARTICLE 17 – MISCELLANEOUS

SC-17.05 Controlling Law DELETE Paragraph 17.05.A in its entirety and INSERT the following in its place:

- A. The terms and conditions of this Contract shall be construed and interpreted under, and all respective rights and duties shall be governed by, the laws of the State of Mississippi. Wherever applicable, each provision of these Contract Documents shall be interpreted in such a manner as to be effective and valid under applicable law, but if any provision of these Contract Documents shall be prohibited by or invalid under applicable law, such provisions shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of these Contract Documents.
- B. This Contract shall not be construed more strictly against one party than the other merely by virtue of the fact that it may have been prepared by one of the parties.

SECTION 00870

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION,
NON-COLLUSION AND OTHER RESPONSIBILITY MATTERS**

Under Executive Order 12549 individuals or organizations debarred from participation in Federal Assistance Programs may not receive an assistance award under a federal program or subagreement there under for \$25,000 or more. Accordingly, each recipient of a Federally-Funded contract or subcontract exceeding \$25,000 must complete the following certification (see 40 CFR 32.510). The prime bidder shall attach the copies of this certification to his bid.

The prospective participant certifies to the best of their knowledge and belief that it and its principals:

- (a) Have not either directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its officials, partners, employees or principal owners;
- (b) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (c) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (d) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (e) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. Subsection 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Repairs to the Terminal G&H Warehouse

Title of Project or Subcontract

Prime or Subcontractor's Name

Signature/Date

() I am unable to certify to the above statements. Attached is my explanation.

SECTION 01000

GENERAL REQUIREMENTS

1.0 GENERAL

1.1 This Section describes the general requirements for all specifications provided in the Project Manual and is complementary to the General Conditions of the Contract contained in the Contract Documents.

1.1.1 This Section is not intended to duplicate or contradict the General Conditions. Contradictions shall be brought to the attention of the Engineer.

In resolving inconsistencies in the Contract Documents, the Contractor shall give precedence in the following order:

1. Contract.
2. Supplementary Conditions.
3. General Conditions.
4. Specifications. (*)
5. Drawings. (*)
6. Geotechnical information.

(*) Figure dimensions on drawings shall take precedence over scale dimensions; detail drawings shall take precedence over general drawings. In case of a discrepancy between specifications and drawings or between various specification sections, the most expensive shall apply.

1.2 RELATED SECTIONS

- Part 2 Contract Forms
- Part 3 Conditions of the Contract
- Part 4 Technical Specifications

1.2.1 Where Related Sections are referenced within a specification section, the Contractor shall coordinate the prescribed Work with the Work prescribed in each Related Section.

1.3 MEASUREMENT AND PAYMENT

1.3.1 Unless a specific line item has been provided in the Bid Form, any Work associated with this Section shall be considered incidental.

1.3.2 If a specification has been provided in the Bid Form, payment shall be made at the appropriate Contract lump sum or unit price item. Payment for work in this section shall be included in the lump sum or unit price bid to which it is subsidiary.

1.4 REFERENCES

The publications listed below form part of these specifications. Each publication shall be the latest revision and addendum in effect on the date this Project Manual is issued for construction. Except as modified by the requirements specified herein or the details of the drawings, Work included in these specifications shall conform to the applicable provisions of the following publications:

- | | |
|--------|--|
| AA | Aluminum Association |
| AAMA | Architectural Aluminum Manufacturer's Association |
| AASHTO | American Association of State Highway and Transportation Officials |
| ABPA | Acoustical and Board Products Association |
| ACI | American Concrete Institute |
| ADA | Americans with Disabilities Act |
| AGA | American Gas Association |

AGMA	American Gear Manufacturers Association
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISE	Association for Iron and Steel Technology
AIISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASD	Allowable Stress Design
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc.
ASME	American Society of Mechanical Engineers
ASSCBC	American Standard Safety Code for Building Construction
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
DASMA	Door and Access Systems Manufacturer's Association
EPA	United States Environmental Protection Agency
FM	Factory Mutual Global
FMRC	Factory Mutual Research Corporation
FS (Fed. Spec.)	Federal Specifications
GRI	Geosynthetic Institute
HI	Hydraulic Institute
HMI	Hoist Manufacturers Institute
INA	Insituform of North America
IBC	International Building Code
IAS	International Accreditation Service
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers, Inc.
ICEA	Insulated Cable Engineers Association
ISO	International Organization for Standardization
LGSI	Light Gauge Steel Institute
MARV	Minimum Average Roll Valve
MBMA	Metal Building Manufacturers Association
MDEQ	Mississippi Department of Environmental Quality
MDOT	Mississippi Department of Transportation
NADCA	National Air Duct Cleaners Association
NBHA	National Builders Hardware Association
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
NFSI	National Floor Safety Institute
NRMCA	National Ready Mixed Concrete Association
NLMA	National Lumber Manufacturers Association
NSF	National Science Foundation
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Act (both Federal and State)
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PEMB	Pre-Engineered Metal Building

PS	Product Standards Section - U.S. Department of Commerce
RMA	Rubber Manufacturers Association
SAE	Society of Automotive Engineers
SDI	Steel Door Institute
SJI	Steel Joists Institute
SSPC	Steel Structures Painting Council
STD SPEC	Mississippi Standard Specifications for Road and Bridge Construction
TCA	Tile Council of America
UL	Underwriters Laboratories, Inc.
WWPA	Western Wood Products Association

1.5 APPLICABLE REFERENCES AND CODES

- 1.5.1 All references to codes, specifications, and standards referred to in specification sections and on drawings shall mean latest edition, amendment or revision of such reference standard in effect as of date of these Contract Documents. In case of a conflict between referenced document and Project Specifications, Project Specifications will govern. If there is a conflict with applicable codes and laws, Contractor shall immediately notify Engineer before proceeding with Work. In case of a conflict between Contract Documents and the law, the law will govern.
- 1.5.2 The governing building codes shall be International Building Code 2015. Building codes are subject to change for the time Projects are designed/engineered to the time the Contract is let. Any discrepancies determined by the Building Official or Contractor shall immediately be brought to the Engineer's attention.
- 1.5.3 The Work in all Projects shall be in strict compliance with the following documents:
1. Americans with Disabilities Act of 1990 – 2010 ADA Standards for Accessible Design and Method documents.
 2. In Public Rights-of-Way, the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (also known as PROWAG).

1.6 CONTRACT DOCUMENTS

- 1.6.1 It is the intent of the Contract Documents to provide the Owner with a complete, operable, functional, system and/or building.
- 1.6.2 The Contract documents are intended to define the general design and scope of the work to complete the Work. The Contractor shall include all components which are normally incidental to the Work. Those components which are not specified or shown on the drawing but which are required as an essential aesthetic, functional, or code required element of the Work shall be included on the Contract. All miscellaneous appurtenances shall be considered as having been included in the applicable unit prices or lump sum prices bid for the Work even though these appurtenances and items may not be specifically called for in the specifications.
- 1.6.3 The contract documents are complementary; that which is required by any one shall be as binding as if required by all.
- 1.6.4 Work not covered in the specifications and drawings will not be required, unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce intended results.
- 1.6.5 Written interpretations of specifications and drawings are valid only when issued by the Engineer.
- 1.6.6 Words and abbreviations which have well-known technical or trade meanings are used in the specifications and drawings in accordance with such recognized meanings.
- 1.6.7 Where custom built equipment is specified, and an independent testing laboratory label or listing is not applicable to the completed product, components used in the construction and assembly of such equipment must be labeled or listed by an independent testing laboratory acceptable to the local governing authorities, where such label or listing is applicable to the components. These labels shall be securely affixed to the components in a conspicuous location.

1.7 DRAWINGS

- 1.7.1 The Vertical Construction Drawings are diagrammatic, intending to illustrate general locations and arrangements of components, structures, piping, wiring, equipment, and specialties and not necessarily showing the required offsets, connections, or appurtenances. Accurately lay out work in coordination with other trades to avoid conflicts and to obtain a neat and workmanlike installation which will afford maximum practical accessibility for operation, maintenance, and headroom.
- 1.7.2 The Site Drawings are diagrammatic, intending to illustrate general locations and arrangements of components, piping, equipment, and structures and are not necessarily showing the required offsets, connections, fittings, or appurtenances. Contractor shall not use electronic files, even if provided by the Engineer, to locate civil materials and equipment, including, but not limited to, hydrants, valves, cleanouts, backflows, meters, etc. All such items shall be located per the Contract Documents (specifications, plans, details, and notes) and industry standards. Accurately lay out Work in coordination with other trades to avoid conflicts and to provide maximum practical accessibility for operation and maintenance.
- 1.7.3 Layout in field from electronic drawings shall be at the risk of the Contractor. The Contractor is responsible for placement/location of objects as detailed or noted in the drawings. If the Contractor does not have sufficient information to place/locate objects, then the Contractor shall immediately bring their concerns to the attention of the Engineer prior to ordering materials and starting Work.
- 1.7.4 Drawing scale is selected for convenience in presentation and not for establishment of dimensions.
1. Use drawing dimensions for performance of Work.
 2. A bar scale is provided on the drawing and/or in the title block. Should a bar scale not equal the length as noted, then Contractor shall be responsible for adjusting scale(s) accordingly.
 3. Verify actual dimensions at the site to determine that sufficient space exists and that no interference will be caused.
- 1.7.5 Omitted words or phrases shall be supplied by inference in the same manner as they are when a “note” occurs on the Drawings.
- 1.7.6 Where on any of the Drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other portions of the Work.
- 1.7.7 Wherever a detail is referenced and developed for a specific condition, same or similar detail shall apply to identical or similar conditions elsewhere on Project even though not specifically referenced.
- 1.7.8 Where the word “similar” occurs on the Drawings, it shall be interpreted in its general sense and not as meaning identical, all details shall be worked out in relation to their location and their connection with other parts of the Work.

1.8 SPECIFICATIONS

- 1.8.1 Specifications are divided into Divisions and Sections for the convenience of writing and using. Titles are not intended to imply a particular trade jurisdiction. Engineer/Owner is not bound to define the limits of any subcontract and will not enter into disputes between the Contractor and his employees, including Subcontractors.
- 1.8.2 Pages are numbered independently for each Section and recorded in the Table of Contents. Section number is shown with the page number at the bottom of each page. The end of each Section of the specifications is ended by “End of Section”. It is Contractor’s responsibility to verify that Contract Documents received for bidding and/or construction are complete in accordance with Table of Contents.
- 1.8.3 The language employed in the Contract Documents is addressed directly to the Contractor. Imperative or indicative language is generally employed throughout and requirements expressed are the mandatory responsibility of the Contractor, even though the Work specified may be accomplished by specialty

subcontractors engaged by the Contractor. References to third parties in this regard shall not be interpreted in any way as to relieve the Contractor of his or her responsibility under this Contract.

1.8.4 These Specifications are of the abbreviated, or “streamlined” type, and may include incomplete sentences.

1.8.5 Omissions of words or phrases such as “the Contractor shall”, “in conformity therewith”, “shall be”, “as noted on the Drawings”, “according to the Drawings”, “a”, “an”, “the” and “all” are intentional.

1.9 QUALITY ASSURANCE

1.9.1 The Contractor shall coordinate and obtain all necessary permits and approvals or guidelines from governing regulatory agencies before proceeding with any items of Work under or within such jurisdiction(s).

1.9.2 Building permits, if required, shall be paid by the Contractor.

1.9.3 The Contractor shall be responsible for verifying the exact locations of all existing underground utilities with providers.

1.9.4 The Contractor shall subcontract with suppliers and fabrication and installation companies which can demonstrate they possess the knowledge, experience, and proven capabilities to fully perform all aspects of the Work required without omission.

1.10 PROJECT / SITE CONDITIONS

1.10.1 The Contractor shall be responsible for providing the necessary utilities including, but not limited to, water, waste, temporary power, gas, and communications to perform the Work to the site, if required. The Contractor shall also be responsible for providing and maintaining waste facilities (chemical toilets), as needed.

1.10.2 For additional Project and or Site Conditions refer to Section 01011 – Site Conditions and Section 01500 – Temporary Construction Facilities and Controls.

1.11 SAFETY / EMERGENCY / HEALTH

1.11.1 Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all persons, Work, materials, equipment, and other property at the Site or adjacent thereto, as described in Part 3 – Conditions of the Contract. Traffic control measures shall be adhered to by the Contractor at all times.

1.11.2 All Contractors and subcontractors acknowledge their obligation to comply with all applicable Federal, State and local acts and regulations, and , without limiting this obligation, and in addition to all other indemnities provided for in this Contract, agree to comply with all requirements of the Occupational Safety and Health Act of 1970 (OSHA), including latest amendments.

1.11.3 Material and equipment incorporated into Project, which by their nature are governed by OSHA regulations, shall conform to said OSHA regulations, for both manufacturer and installation. Material and/or installation that does not conform to said OSHA regulations shall be corrected by responsible Contractor to comply with such regulations at no additional cost to Owner or Engineer.

1.11.4 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. In the event of such an emergency, the Contractor shall act without previous instructions from the Owner or Engineer, as the situation may warrant.

1.11.5 Accident Reports

If serious injury or damage occurs, the accident shall be reported immediately by telephone or messenger to the Engineer and to appropriate local authorities. In addition, the Contractor must promptly report in writing to the Engineer all accidents in connection with the work, giving full details, names and statements of witnesses.

- 1.11.6 If a claim is made by anyone against the Contractor or any subcontractor resulting from an accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim, including investigating and restitution.

1.12 COMPLAINTS

All complaints received by the Contractor shall be reported to the Engineer no later than the working day following receipt thereof. Such reports shall include the name, address, date, time received, date and type of action complained above, and a brief description of the alleged damages or other circumstances upon which the complaint is predicated. Each complaint shall be assigned a separate number, and all complaints shall be numbered consecutively in order of receipt. In the event more than one complaint is received from the same complainant, each later complaint shall show all previous complaint numbers registered by the same complainant. In addition, a summary report shall be made to the Engineer each month which shall indicate the date, time, and name of the person investigating the complaint and the amount of damages claimed (or estimated thereof), including the amount of settlement, if any. When settlement of a claim is made, the Engineer shall be furnished with a copy of the release of claim by the claimant. The Owner shall be notified immediately, throughout the statutory period of liability, of any formal claims or demands made by attorneys on behalf of claimants; of the serving of any notice, summons, subpoena, or other legal documents incidental to litigation; and for any out of court settlement or court verdicts resulting from litigation.

2.0 PRODUCTS

- 2.1 Refer to Section 01330 – Submittal and specific technical specifications.

3.0 EXECUTION

3.1 FIELD QUALITY CONTROL

- 3.1.1 Workmanship completed under this work shall be first class in every respect. Surfaces, members, frames, and units shall be true, even, and in alignment. No warped, bent, dented, or otherwise damaged members of units shall be built into the work. Connections shall be true, tight, and neat. Arises, soffits, and intersections shall be straight and true. Finishes shall be free from chips, dents, or other imperfections not in conformity with first-class work.
- 3.1.2 Factory assemblies shall conform to the first-class standards of the trades concerned.
- 3.1.3 Defective materials shall not be built in and, if built in, shall be removed at the Contractor's expense. Where, in the opinion of the Construction Manager or Owner, doubt exists as to the quality or effectiveness of the work, the work shall be reinstalled as directed.

3.2 CLEANUP

3.2.1 Daily Cleanup

- A. At all times, maintain areas covered by the Contract and public properties free from accumulations of waste, debris, and rubbish caused by construction operations.
- B. Remove from site or place in appropriate containers all crates, cartons, trash and flammable waste materials from the work areas by the end of each working day. Such containers shall be incidental and provided by the Contractor.
- C. Cleaning and disposal operations shall comply with local ordinances and anti-pollution laws. Do not burn or bury rubbish, debris, or waste materials on the project site or dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of waste, debris, and rubbish into streams or waterways is prohibited.

- D. Excavated materials shall be removed from the site in a manner that will cause the least damage to adjacent lawns, grassed areas, trees, gardens, shrubbery, or fences regardless of whether these are on private property or on public rights-of-way.
- E. Clean and restore any finished surface which is defaced in any way.
- F. Provide and maintain nonstaining kraft building paper on finished floors.

3.2.2 Final Cleanup

Refer to Section 01700 – Contract Closeout.

*** END OF SECTION ***

SECTION 01010 SUMMARY OF WORK

1.0 GENERAL

1.1 This section describes the project in general and provides an overview of the extent of the work to be performed. Detailed requirements and extent of work is stated in the specifications and Contract Drawings.

1.2 RELATED SECTIONS

Section 00100 Invitation to Bid

1.3 MEASUREMENT AND PAYMENT

1.3.1 Unless a specific line item has been provided in the Bid Form, any Work associated with this Section shall be considered incidental.

1.3.2 If a specification has been provided in the Bid Form, payment shall be made at the appropriate Contract lump sum or unit price item. Payment for work in this section shall be included in the lump sum or unit price bid to which it is subsidiary.

1.3.3 Any part or item of the work which is reasonably implied or normally required to make each installation satisfactorily operable shall be performed by the Contractor and the expense thereof shall be included in the applicable unit prices or lump sum prices bid for the work. It is the intent of these specifications to provide the Owner with complete operable systems, subsystems, and other items of work. All miscellaneous appurtenances and other items of work that are incidental to meeting the intent of these specifications shall be considered as having been included in the applicable unit prices or lump sum prices bid for the work even though these appurtenances and items may not be specifically called for in the specifications.

1.4 DESCRIPTION OF THE PROJECT

1.4.1 The Contractor shall provide all labor, materials, and supervision to perform the Work as generally described in Section 00100 – Invitation to Bid and described in the Project Manual and illustrated in the Contract Drawings.

1.5 SEQUENCE OF OPERATIONS

1.5.1 The Contractor is required to determine his own method of construction and detailed work sequence, within the terms of the Contract. This Contract shall schedule the Work in the following sequence:

- A. Coat roof including any and all subsequent Work necessary to replace roof panels and purlins.
- B. Structural column bases.
- C. Wall girts and panels.
- D. Alternate Work to coat primary and secondary building components.

1.5.2 The Contractor shall cooperate in the coordination of his activities in a manner that will provide the least interference with other contracts, other contractors, and/or utility companies working in the area.

1.5.3 If any difficulty or dispute should arise in the accomplishment of the above, the problem shall be brought immediately to the attention of the Engineer.

1.5.4 The warehouse could be partially or fully occupied with product at the time of the Contract, with 1-2 week intervals when it will be empty. The Owner recognizes the challenges that could be imposed on the Contractor to perform certain Work. The Owner will work with the Contractor to minimize impacts by coordinating staging of product around scheduled Work areas. It will be required that the Contractor provide and maintain a detailed construction schedule specifically for work occurring inside the Warehouse. The Owner will provide a schedule of product arrival, staging, and shipping activities for the Contractor's coordination.

1.6 WORK COVERED BY CONTRACT DOCUMENTS

1.6.1 Contractor's Duties:

1.6.1.1 Except as specifically noted, provide and pay for:

- a. Labor, materials and equipment.
- b. Tools, construction equipment and machinery.
- c. Water, heat and utilities required for construction.
- d. Other facilities and services necessary for proper execution and completion of the Work.

1.6.1.2 Pay legally required sales, consumer, use, payroll, privilege and other taxes.

1.6.1.3 Secure and pay for, as necessary, for proper execution and completion of work, and as applicable at the time of the receipt of the bids:

- a. Permits.
- b. Government fees.
- c. Licenses.

1.6.1.4 Give required notices.

1.6.1.5 Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.

1.6.1.6 Promptly submit written notice to Professional of observed variance of Contract Documents from legal requirements. It is not the contractor's responsibility to make certain that drawings and specifications comply with codes and regulations. Appropriate modifications to Contract Documents will adjust necessary changes. Assume responsibility for work known to be contrary to such requirements, without notice.

1.6.1.7 Enforce strict discipline and good order among employees. Do not employ or work unfit persons, or persons not skilled in assigned task.

1.6.1.8 Provide a written safety plan, when required by Owner.

1.6.2 Hazardous Materials: The General Contractor is responsible for the removal and disposal of any hazardous materials encountered in the performance of the Contract requirements. Hazardous Containing Materials (HCM) include, but are not limited to, Asbestos and Lead Paint and should be identified and removed as a part of the Contract. The absence of details does not relieve the General Contractor from the responsibility of removal and disposal; but, a Change Order could be executed in the absence of identified HCM in the documents.

1.6.3 Subcontractor's List: The General Contractor will submit to the Owner a list of all Subcontractors, including disciplines to be used on the Project prior to Contract award by the Owner. If value of Subcontractor's work is Fifty Thousand Dollars (\$50,000) or over, then include their Certificate of Responsibility Number. Any Subcontractor listed must be acceptable to the Owner.

1.6.4 Coordination: The General Contractor is responsible for the coordination of the total project. All other Contractors and all Subcontractors will cooperate with the General Contractor so as to facilitate the general progress of the Work. Each trade shall afford all other trades every reasonable opportunity for the installation of their work.

1.6.5 Shutoffs/Disruptions to Service

1.6.5.1 Provide written notification of Work in area at least three (3) working days (not including weekends) in advance, unless otherwise instructed in writing.

- 1.6.5.2 Plan Work to minimize down time. Work with the utility provider to schedule disruption for a time that minimizes impact.
- 1.6.5.3 Provide written work plan and schedule for disruptions to service that exceed one hour.
- 1.6.5.4 Provide notification to end user's to be impacted by the disruption by both person-to-person notification and written notices.
- 1.6.5.5 Schedule of Utilities Interruptions. As soon as practical, and at least one week prior to the first outage, the Contractor shall prepare a proposed schedule of utilities outages. The schedule shall include proposed water, wastewater, and electrical outages. The Contractor will not be bound by the entire schedule as originally submitted, but he will be expected to modify the schedule as required, and to the best of his ability, adhere to an accurate schedule as adjusted on a week-to-week basis.
- 1.6.5.6 The Contractor must give the Owner a minimum of 16-working hours' notice prior to any utilities interruptions, unless otherwise instructed in writing.
- 1.6.6 Concealed Conditions Unacceptable to Contractor
 - 1.6.6.1 Should the Contractor discover conditions that are inconsistent with the Contract or existing construction of a substandard nature that will affect the satisfactory completion of the Work, the Engineer shall be notified immediately.
- 1.6.7 Superintendence and Employees
 - 1.6.7.1 Before starting Work, the Contractor shall designate a competent authorized representative to represent and act for the Contractor and shall inform the Engineer in writing of the name and address of such representative, together with a clear definition of the scope of his authority to represent and act for the Contractor, and shall specify any and all limitations of such authority. Such representative shall be present or duly represented at the site of work at all times when Work is actually in progress, and during periods when Work is suspended, arrangements acceptable to the Engineer shall be made for emergency Work that may be required. The Contractor's authorized representative shall be supported by competent assistants, as necessary; and the authorized representative and his assistants shall be satisfactory to the Engineer. All requirements, instructions and other communications given to the authorized representative by the Engineer shall be as binding if given to the Contractor.
 - 1.6.7.2 None of the Contractor's superintendents, supervisors, or Engineers shall be withdrawn from the work without due notice being given to the Engineer; and no such withdrawal shall be made if it will jeopardize successful completion of the Work.
 - 1.6.7.3 The Contractor shall employ only competent and skilled personnel to perform any Work. The Contractor shall be responsible for maintaining the orderly and faithful conduct of its employees.
 - 1.6.7.4 The Owner may, in writing, require the Contractor to remove from the Work any employee whom the Engineer/Owner deems incompetent, careless, insubordinate, or otherwise objectionable or whose continued employment on the Work is deemed by the Engineer/Owner to be contrary to the Owner's interest.
- 1.7 WORK BY OTHERS
 - Work by Others shall be described in each appropriate Project Manual section and noted on the Drawings.
- 1.8 OWNER-FURNISHED PRODUCTS
 - 1.8.1 Products Furnished by Owner: Products furnished by Owner shall be described in each appropriate Project Manual section and noted on the Drawings.

1.9 CONTRACTOR'S USE OF PREMISES

1.9.1 Confine operations at site to areas permitted by:

- a. Law.
- b. Ordinances.
- c. Permits.
- d. Contract Documents
- e. Owner.

1.9.2 Do not unreasonably encumber site with materials or equipment.

1.9.3 Do not load structure with weight that will endanger structure.

1.9.4 Assume full responsibility for protection and safekeeping of products stored on premises.

1.9.5 Move any stored products which interfere with operations of Owner or other Contractors.

1.9.6 Obtain and pay for use of additional storage or work areas needed for operations.

1.9.7 Limit use of site for work and storage to the area indicated in the drawings.

1.9.8 At all times, maintain areas covered by the Contract and public properties from accumulations of waste, debris, and rubbish cause by construction operations.

2.0 **PRODUCTS** (Not Used)

3.0 **EXECUTION** (Not Used)

*** END OF SECTION ***

SECTION 01011 SITE CONDITIONS

1.0 GENERAL

1.1 This section describes the Contractor's responsibilities as it relates to the existing conditions of the Project Site.

1.2 RELATED SECTIONS

Division 02 Specifications

1.3 MEASUREMENT AND PAYMENT

1.3.1 Unless a specific line item has been provided in the Bid Form, any Work associated with this Section shall be considered incidental.

1.3.2 If a specification has been provided in the Bid Form, payment shall be made at the appropriate Contract lump sum or unit price item. Payment for work in this section shall be included in the lump sum or unit price bid to which it is subsidiary.

1.4 PROJECT / SITE CONDITIONS

1.4.1 Subsurface investigations have not been made. The Contractor shall provide his own investigation as required to properly accomplish the work.

1.4.2 Differing Subsurface Conditions

1.4.2.1 In the event latent physical conditions are found materially different from those ordinarily encountered and generally recognized as inherent in the character of work covered in these Contract Documents, the Contractor shall promptly, and before such conditions are disturbed, notify the Engineer in writing of such changed conditions.

1.4.2.2 The Engineer will investigate such conditions promptly, with Contractor's assistance if necessary, and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed by the Engineer. If the Engineer finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for performing the work, the Engineer will recommend to the Owner the amount of adjustment in cost and time he considers reasonable. The Owner will make the final decisions on all Change Orders to the Contract regarding any adjustment in cost or time for completions.

1.4.3 Site Investigation and Representation

1.4.3.1 The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials; availability of labor, water, electric power, and roads; uncertainties of weather, river stages, or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during the prosecution of the work; and all other matters which can in any affect the work or the cost thereof under this Contract.

1.4.3.2 The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface and subsurface materials and groundwater to be encountered from inspecting the site. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the work. Neither the Owner, nor the Engineer assume responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner, or the Engineer.

1.4.4 Vertical and Horizontal Control

1.4.4.1 The Contractor shall provide any additional vertical and horizontal control points if necessary for construction. It will be the Contractor's sole responsibility to lay out the work. When new construction connects to existing facilities, the Contractor shall check and establish the exact location of the point of connection prior to construction. The Engineer will not be responsible for any elevations given other than those provided as indicated herein.

1.4.4.2 All control points, marks, and other information shall be carefully preserved by the Contractor, and in the event of their careless or unnecessary destruction or removal by him or any of his subcontractors, such stakes, marks, and other information will be replaced at the Contractor's expense by means of a deduction from the Contract monies due the Contractor.

1.4.4.3 The Contractor shall recheck all top and invert elevations for storm and sanitary sewer lines prior to construction. Copies of the field notes shall be turned over to the Engineer for review. The field information should be obtained utilizing elevations from the drawings. Rod readings for determination of grade are not acceptable.

1.4.4.4 The Contractor shall confirm all finish grades for paved surfaces, sidewalks, foundations, or any hard surface prior to construction. Copies of the field notes shall be turned over to the Engineer for review. The field info shall be obtained utilizing elevations from the Drawings. Rod readings for determination of grade are not acceptable.

1.4.4.5 Failure to perform this work will not relieve the Contractor from responsibility for checking and adjusting any pipeline grades. Failure to perform this Work does not relieve the Contractor from any modifications to correct improper grades at the Contractor's expense.

1.4.5 Profile Elevations

1.4.5.1 Existing ground profiles where shown on the drawings were plotted from approved field surveys.

1.4.6 Land Monuments

1.4.6.1 The Contractor shall preserve all existing land monuments encountered. If monuments interfering with the proposed construction are encountered during the work, notify the Engineer immediately and allow 2 working days for arrangements to be made to reference them for later replacement. All monument replacement shall be at the expense of the Contractor and performed by a land surveyor licensed in the State of Mississippi.

1.4.7 Existing Utilities

1.4.7.1 Known utilities and structures adjacent to or encountered in the work are shown on the drawings. The locations shown are taken from existing records and it is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the Owner, or the Engineer for their accuracy or completeness.

1.4.7.2 Contractor shall be responsible for contacting state's one-call location service prior to beginning execution.

1.4.7.3 Prior to move-in, the Contractor shall verify the location of utilities, including depth and incorrect horizontal locations and report this information to the Engineer. Conflicts, if any, will be resolved prior to move-in.

1.4.7.4 No attempt has been made to locate services whether water, sewer, or gas. Location and repairs to services damaged by the Contractor are considered incidental to construction and the cost should be included in the applicable unit price or lump sum bid items.

- 1.4.7.5 In the event utilities and/or structures are encountered that are not shown on the drawings, adjustments to the Contract shall be provided for in accordance with the GENERAL CONDITIONS, ALTERATIONS. The Contractor shall excavate areas where latent components may materialize some time ahead of construction in order to allow the Owner to institute appropriate changes and to mitigate any delays.
- 1.4.8 Responsibility for Utility Properties and Service
- 1.4.8.1 Neither the Owner nor his officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.
- 1.4.8.2 The Contractor shall at all times provide unobstructed access to fire hydrants, underground conduit, manholes, and utility valve boxes.
- 1.4.8.3 Where the Contractor's operations could cause damage or inconvenience to railway, telegraph, telephone, television, power, oil, gas, water, sewer, irrigation, or other systems adjacent or near the work, operations shall be suspended until the Contractor has made all arrangements necessary for the protection of these utilities and services and the Engineer has been notified of these arrangements.
- 1.4.8.4 Notify the Engineer and all utility offices that are affected by the construction operation at least 7 days in advance of commencing construction operations. The Contractor shall not expose any utility without first obtaining permission from the appropriate agency and notifying the Engineer of this permission. Once permission has been granted, locate and, if necessary, expose and provide temporary support and/or relocation in advance of operations.
- 1.4.8.5 Protect all utility poles from damage. If interfering utility poles, guy wires or anchors are encountered, the Contractor shall notify the Engineer and the appropriate utility company as soon as possible and at least 48 hours in advance of construction operations to permit the necessary arrangements for protection or relocation of the interfering poles.
- 1.4.8.6 The Contractor shall be solely and directly responsible to the Owner and operators of such utility properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage that may result from the construction operations under his Contract.
- 1.4.8.7 In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly possible and bear all costs of repair. In no event shall interruption of any water or utility service be allowed unless prior approval is granted by the Owner of the utility.
- 1.4.8.8 The Contractor shall replace, at his own expense, any and all other existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract Documents or ordered by the Engineer.
- 1.4.9 Unforeseen Utility Relocations Required by Construction
- 1.4.9.1 Where existing utilities, structures, or other physical obstructions are unforeseen and in no way can be interpreted/determined from the Drawings or visually indicated from existing surface features and block or impede construction under this Contract, they shall be permanently relocated. Such relocations shall be considered as required by construction. The Engineer will make Contract adjustments according with Section 00700 General Conditions of the Construction Contract, Article 9.

All other relocations shall be treated in accordance with UTILITY INTERFERENCES INCIDENTAL TO CONSTRUCTION below.

1.4.9.2 The Contractor shall give immediate notice to the Engineer and the Owner of the utility when a physical conflict is determined to exist. The actual relocation will be accomplished by the Owner of the utility, structure or other physical obstruction unless otherwise specified in these Contract Documents or agreed by Owner and Engineer.

1.4.10 Utility Interferences Incidental to Construction

1.4.10.1 Where existing utilities, structure, or other physical obstructions are so located, illustrated, or noted on Drawings as to interfere with the Contractor's method of performing the work, and block or impede construction, under the Contract, any modification, alteration, or relocation of interfering utility, either permanent or temporary, shall be accomplished at the expense of the Contractor. Any delays resulting from the required relocations of the utilities are the responsibility of the Contractor. It is understood and agreed that the Contractor has considered in their bid:

1. All the permanent and temporary utilities in their present and relocated positions as shown on the Drawings.
2. The completion dates for various utility adjustments, and at no additional compensation will be allowed for delays, inconvenience or damage sustained by the Contractor due to any interference from said utility or the operation of moving them.

1.4.10.2 The Contractor shall give immediate notice to the Engineer and the Owner of the utility when an interference is determined to exist and shall obtain approval to relocate such utility or to discontinue service from the Engineer and the Owner of the utility. The Owner of the utility shall have the right to do all work required to discontinue, relocate, and replace interfering utilities and charge the Contractor for all costs thereof. When approved by the Engineer and the Owner of the utility, all work required to discontinue, relocate and replace interfering utilities may be done by, or arranged for, by the Contractor. All such discontinuance, relocation, and replacement shall be accomplished in accordance with all requirements of the Owner of the utility.

1.4.10.3 When notified by the Contractor that an interference or conflict has been determined to exist, the Engineer will determine whether such interference shall be considered as required by construction or as incidental to construction.

1.4.11 Interfering Structures

1.4.11.1 Take necessary precautions to prevent damage to existing structures where on the surface, aboveground, or underground. An attempt has been made to show major structures on the drawings. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and it is presented as a guide to avoid known possible difficulties.

1.4.11.2 Protect existing structures from damage, whether or not they lie within the right-of-way or the limits of the easements obtained by the Owner. Where existing structures are damaged during the work, they shall be restored at the Contractor's expense to at least their original condition and to the satisfaction of the Engineer.

1.4.11.3 The Contractor may, with the approval of the Engineer and without additional compensation, remove and replace in a condition as good as or better than original, any small interfering structures such as fences, mail boxes and signposts that interfere with the Contractor's operations. Prior to Work associated with mailboxes, Contractor shall coordinate the removal and replacement with the City/County, Postal Service, Engineer, and Property Owner. Placement shall be in strict accordance with standard details.

1.4.12 Field Relocation

1.4.12.1 During the progress of the work, minor relocations of the work may be necessary. Such relocations shall be made only with the agreement of the Engineer. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor proceeds with the work despite this interference, he shall be responsible for any damage that may occur.

1.4.13 Easements

- 1.4.13.1 Where part of the work is located on private property, easements are shown. The Contractor shall determine the adequacy of easements and shall obtain additional easements, if required.
- 1.4.13.2 Upon completion of work in any Owner provided easement area, the surface shall be restored as required and to the satisfaction of the Engineer. Restoration shall begin within 14 days following completion of construction in the easements. The restoration shall include, at minimum: final grading and grassing; limbing; fence repairs and replacement; sidewalk; curb; and drive repairs; etc. Failure to comply with this provision shall be considered reason to withhold a portion or all monies due the Contractor on Request for Payment.
- 1.4.13.3 The Contractor shall confine construction operations to within the easement limits or make his own special agreement with the property owners for any additional area required and provide two copies of written verification to the Engineer.
- 1.4.13.4 Before final payment will be authorized, the Contractor shall furnish the Owner with written releases from property owners where special agreements have been made by the Contractor, or when his operations, for any reason, have not been kept within the limits of easements obtained by the Owner.
- 1.4.13.5 In the event the Contractor is unable to secure the written releases required in the above paragraph, he shall inform the Engineer of the reasons for his failure to do so. The Engineer will examine the site and will direct the Contractor to complete any work that may be necessary to satisfy the terms of the easement or special agreement. Should the Contractor refuse to do the work, the Owner reserves the right to have it done by separate contract and deduct the cost of same from monies due the Contractor, or the Owner may require the Contractor to furnish a bond in a sum satisfactory to the Owner to cover any legal claims for damages. When the Owner is satisfied that the work has been completed in accordance with the terms of the easement or special agreement, he may waive the requirement of obtaining the statement if the Contractor's failure to obtain such statement is due to the grantor's refusal to sign and this refusal is not based upon any legitimate claims that the Contractor has failed to fulfill the terms of the easement or special agreement, or if the Contractor has overdue hardship in contacting the grantor.

2.0 **PRODUCTS** (Not Used)

3.0 **EXECUTION** (Not Used)

*** END OF SECTION ***

SECTION 01012
MOBILIZATION / DEMOBILIZATION

1.0 GENERAL

1.1 The Work in this Section includes the following Work:

Mobilization includes movement of all labor, equipment, supplies and incidentals to the project site; establishment of facilities necessary for Work on the Project; and other Work and operations which must be performed or costs not directly attributable to other pay items, exclusive of bidding costs, which must be incurred by the Contractor before beginning and during the early stages of production work on the project site.

Demobilization includes movement of all labor, equipment, supplies and incidentals from the project site; dismantling and removal of temporary facilities; clean-up of the project site and all work areas; and other work and operations which must be performed or costs not directly attributable to other pay items which must be incurred by the Contractor after completion of certain items of work and all other work on the Contract has been completed.

1.2 RELATED SECTIONS

Part 4 Technical Specifications

1.3 MEASUREMENT AND PAYMENT

1.3.1 Payment shall be made at the appropriate Contract lump sum. Payment for work in this section shall be included in the lump sum price bid to which it is subsidiary.

1.3.2 The percentage of the lump sum amount for this Item will be measured in accordance with the mobilization/demobilization item within the following limitations:

Percentage of Total Contract Earned (A)	Maximum Percentage of Lump Sum Allowed
10%	40%
25%	60%
80%	90%
(B)	100%

A. Total Contract earned will be equal to certified estimates approved by the Engineer exclusive of the Mobilization-Demobilization Lump Sum and Materials Stored Amounts.

B. When all work under this Contract is completed by the Contractor and accepted by the Engineer, one hundred percent (100%) of the Lump Sum Amount will be allowed.

2.0 PRODUCTS (Not Used)

3.0 EXECUTION (Not Used)

*** END OF SECTION ***

SECTION 01014

PROTECTION OF THE ENVIRONMENT

1.0 GENERAL

1.1 This section describes the Contractor's responsibilities as it relates to protecting the environment of the Project Site. The Contractor, in executing the work, shall maintain all work areas on and off the site free from environmental pollution that would be in violation of any federal, state, or local regulations.

1.2 RELATED SECTIONS

Part 4 Technical Specifications

1.3 MEASUREMENT AND PAYMENT

Payment shall be included as part of the appropriate lump sum or unit price item in the Bid. Any Work associated with this Section shall be considered incidental, unless a specific line item has been provided in the Bid Form.

2.0 PRODUCTS (Not Used)

3.0 EXECUTION

3.1 PREPARATION

3.1.1 Protection

Take adequate measures to prevent the impairment of the operation of the existing sanitary sewer system, storm drainage systems, and waterways. Prevent construction material, pavement, concrete, earth, or other debris from entering a sanitary sewer or sanitary sewer structure, storm drainage systems, and waterways.

3.1.1.1 Protection of Sewers

All sanitary flow interfering with construction and requiring diversion shall be diverted to sewers leading to a wastewater treatment plant. Prior to commencing excavation and construction, the Contractor shall submit for the Engineer's review detailed plans (including routing and connections) showing how he intends to handle and dispose of sanitary sewer wastes and/or handle conflict with storm sewer. By reviewing the plan, the Engineer neither accepts any responsibility for the adequacy thereof nor for any damages to public or private property resulting therefrom. Such responsibilities remain with the Contractor.

3.1.1.2 Protection of Waterways

The Contractor shall comply with all laws prohibiting the pollution of any lake, stream, river, or wetland by the dumping of, or the delivery of any runoff water containing any refuse, rubbish, dredge material, or debris therein.

The Contractor shall comply with the procedures outlined in the U.S. Environment Protection Agency manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning and Implementation", and "Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity" and shall incorporate adequate measures to minimize delivery of sediment from the construction site to adjacent or downstream trees, lands, or water bodies.

3.1.1.3 Noise and Dust Control

The Contractor shall so conduct all his operations that they will cause the least annoyance to the residents in the vicinity of the work, and shall comply with all applicable laws. Vehicles carrying rock, concrete, or other material shall be routed over such streets as will cause the least annoyance to the public and shall not be operated on public streets between the hours of 8 p.m. and 7 a.m. or on Sundays or legal holidays unless the Contractor obtains written permission from appropriate agencies within the municipality(ies) in which the work is to be conducted.

All unpaved streets, roads, detours, haul roads, or roads used in the construction area shall be given a dust preventive treatment or periodically watered to prevent dust. Applicable environmental regulations for dust preventions shall be strictly enforced.

*** END OF SECTION ***

SECTION 01016
PROTECTION OF PROPERTY

1.0 GENERAL

1.1 This section describes the Contractor’s responsibilities as it relates to protecting the property and safety of the Project Site.

1.2 RELATED SECTIONS

Part 4 Technical Specifications

1.3 MEASUREMENT AND PAYMENT

Payment shall be included as part of the appropriate lump sum or unit price item in the Bid. Any Work associated with this Section shall be considered incidental unless a specific line item has been provided in the Bid Form.

1.4 SUBMITTALS

The following shall be submitted in accordance with “Section 01330 – Submittals”, in sufficient detail to show full compliance with the specification:

SD-01 Pre-construction: Pre-Construction and Post-Construction audio video recorded survey.

1.5 QUALITY ASSURANCE

1.5.1 Regulatory Requirements

1.5.1.2 Notice of Work

At least 7 days prior to move in, the Contractor shall notify all public and private entities of his mobilization efforts in the following manner:

1. Utility District/Authority: a letter directed to the Manager.
2. County/City: a letter directed to the County Administrator/City Manager/Mayor.
3. Written notice provided to the local Sheriff Office/Police Department, Fire Department, Postal Services, School Board, and Utilities serving the area.
4. General public: Notice published in the Mississippi Press and Sun Herald.

The notifications shall include the commencement dates, a general description of the work required, and a person to contact with questions concerning the project. Copies of the notifications will be sent to the Engineer for review prior to publication.

1.5.1.3 Prior to mobilizing, the Contractor shall provide a Pre-Construction Video in accordance with Section 01330 – Submittals.

1.5.1.4 Access for Emergency, Public Transportation, and Postal Vehicles

Notify the fire department, police department, and applicable public and school transportation companies at least 14 days before closing any street or portion thereof. No closing shall be made without appropriate concurrence of aforementioned departments. Notify said departments when the streets are again passable for emergency vehicles. Maintain vehicle access to consecutive arterial crossings or dead end streets, in excess of 300 linear feet, unless special written permission has been obtained from the fire and police departments.

The Contractor shall leave his night emergency telephone number or numbers with the fire and police departments, so that contact may be made easily at all times in case of barricade or flare trouble or other emergencies.

Maintain postal service facilities in accordance with the requirements of the U.S. Postal Service. Move mailboxes to temporary locations designated by the Postal Service and, at the completion of the work in each area, replace them in their original location and in a condition satisfactory to the U.S. Postal Service.

1.6 PROJECT / SITE CONDITIONS

1.6.1 Protection of Property

The Contractor shall employ such means and methods as necessary of adequately protect all property against damage. In the event of damage to property, the Contractor shall, at his own expense, immediately restore the property to a condition at least equal to its original condition and to the satisfaction of the Engineer.

1.6.2 Tree Removal

No trees, except those specifically shown on the drawings to be removed, shall be removed without the express approval of the Engineer. Removed trees will be disposed of off the work site by the Contractor.

Where construction passes under the drip line of hardwood trees and 12" plus diameter pine, the Contractor shall protect the trees from damage during construction.

In general, the Contractor shall hand dig as required and shall not cut any root 4" and larger. Recompact soil after construction by hand, if necessary to protect the root system.

1.6.3 Preservation of Drainage Ditches

After backfilling of excavations, restore all drainage ditches destroyed, damaged, or otherwise modified during construction to a condition equivalent to the condition of the ditch before construction. Ditches so reconstructed shall be built in their original locations and cross section or as otherwise shown on the drawings.

1.6.4 Street Cleanup during Construction

Tracking or dropping of dirt or other materials from the site onto any public or private street shall be minimized. The Contractor shall clean all spilled dirt, gravel, or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation.

1.6.5 Finishing of Site, Borrow and Storage Areas

Upon completion of the project, all areas used by the Contractor shall be properly cleared of all temporary structures, rubbish, and waste materials and properly graded to drain and blend in with the adjoining property. Areas used for the deposit of waste materials shall be finished to properly drain and blend with the surrounding terrain.

1.6.6 Reseeding and Fertilizing

Originally seeded areas shall be fertilized and reseeded with first quality seed or planted with new sod as approved by the Owner. All ground preparation, reseeded, and sodding shall be done in accordance with the best accepted practices for lawn planting. The Contractor shall be responsible for obtaining a satisfactory grass turf acceptable to the Owner, or as otherwise shown on the drawings.

- 1.6.7 Stockpile excavated materials in a manner that will cause the least damage to adjacent lawns, grassed areas, gardens, shrubbery, or fences, regardless of whether there are on private property, or on state, county, or city rights-of-way. Remove all excavated materials from grassed and planted areas and leave these surfaces in a condition equivalent to their original condition. Replace topsoiled areas where pipeline installations are outside of roadways. The Contractor shall rake and grade these areas to conform to their original contour and seed flat areas and sod all areas with a slope greater than 2 to 1.
- 1.6.8 All existing drainage ditches and culverts shall be reopened and graded and natural drainage restored. Restore culverts broken or damaged to their original condition and location.
- 1.6.9 Upon completion of pipe laying backfilling operation, hand-rake and drag all former grassed and planted areas, leaving all disturbed areas free from rocks, gravel, clay, or any other foreign material and ready, in all respects, for seeding. The finished surface shall conform to the original surface, and shall be free draining and free from holes, ruts, rough spots, or other surface features detrimental to a seeded area.
- 1.6.10 The Contractor shall be responsible for erosion control for the entire project site throughout the construction term and shall take preventive measures for keeping erosion from occurring.

2.0 **PRODUCTS** (Not Used)

3.0 **EXECUTION** (Not Used)

*** END OF SECTION ***

SECTION 01230 ALTERNATES

1.0 GENERAL

1.1 This specification prescribes the general requirements for Alternate Bid Schedules in the Bid Form.

1.2 RELATED SECTIONS

Division 01 General Requirements

1.3 MEASUREMENT AND PAYMENT

Payment for Work in this section shall be included in the unit price / lump sum price as outlined in the Bid. Bid price shall include all cost of labor, materials, and incidentals complete.

1.4 ALTERNATES REQUIREMENTS

1.4.1 This section identifies each Alternate and describes basic changes to the Work only when that Alternate is made a part of the Work by specific provisions in the Agreement.

1.4.2 This section includes only the non-technical descriptions of the Alternates. Refer to the specific Sections of Divisions 2 through 16 of the Specifications for technical descriptions of the Alternates.

1.4.3 The Base Bid and Alternates shall include the costs of all supporting elements required, so that the combination of the Lump Sum Base Bid and any Alternates shall be complete. The scope of Work for all Alternates shall be in accordance with applicable Drawings and Specifications.

1.4.4 The Base Bid shall include all Work included in the Drawings and Specifications except work described as Alternates. Each Alternate is intended to cover all of the Work required for a complete finished job.

1.4.5 The Base Bid and the Alternates are exclusive in their scope. There is no overlap between or among the Base Bid and Alternates. The cost of any item of Work shall be included only once, in the Base Bid or in the Alternates.

1.4.6 Coordination of related Work and modifications to surrounding Work as required to properly integrate each Alternate, and to provide the complete construction required by the Contract Documents, is the responsibility of the Contractor.

1.4.7 Bidders shall submit bids for the Base Bid and all requested Alternates as listed on the Bid Form. Failure to quote an amount of the insertion of the words "no bid". "none" or words of similar import, will be considered as not completing the proposal and may constitute disqualification of the entire bid. When there is no change in the base bid due to using the Alternate, the words "No Change" should be used. The words "No Change" will be interpreted to mean that the Work described in the Alternate shall be completed at no adjustment or change in the cost of the Base Bid.

1.4.8 Except as otherwise specifically provided in Section 1.2, the Work described in Alternates shall be completed with no increase in Contract Time.

1.4.9 All Alternates amounts shall be quoted in the appropriate spaces provided on the Bid form.

1.4.10 The Owner reserves the right to award none, any one or more selected in any order, or all of the Alternates in combination with the work covered by the Base Bid. Alternates will not be awarded without awarding the Base Bid.

1.4.11 The Owner reserves the right to determine the low Bid as the Base Bid alone or the sum of the Base Bid and any combination of Alternates it chooses to award.

1.5 DESCRIPTION OF ALTERNATES

1.5.1 ALTERNATE NO. 1:

Contractor shall submit a unit price bid in accordance with the bid form included in the contract documents. Alternate number one includes preparing and painting all roof secondary steel, including new and existing components. All electrical and fire protection components are not required to be painted. Lighting fixtures and sprinkler head shall not be painted and shall be protected as necessary to avoid overspray. Overspray on floors is not a concern of the Owner.

1.5.2 ALTERNATE NO. 2:

Contractor shall submit a unit price bid in accordance with the bid form included in the contract documents. Alternate number two includes preparing and painting all wall secondary steel, including new and existing components. Electrical and fire protection components are not required to be painted and shall be protected from overspray. Overspray on concrete walls and floors is not a concern of the Owner.

1.5.3 ALTERNATE NO. 3:

Contractor shall submit a unit price bid in accordance with the bid form included in the contract documents. Alternate number three includes preparing and painting all primary steel frames, including rafters, interior and exterior columns. Markings on interior columns shall be provided under this alternate.

1.5.4 ALTERNATE NO. 4:

Contractor shall submit a unit price bid in accordance with the bid form included in the contract documents. Alternate number four includes remobilization that may be required due to restricted access from materials stored in the warehouse. Remobilization shall only occur if the Owner cannot relocate/remove materials and as approved in writing by Engineer prior to demobilizing. Prior to demobilizing, the Contractor shall provide an updated schedule including the coordinated remobilization date.

1.5.5 For each alternate defined above, the specifications and design criteria in this Project Manual shall apply to both design concepts.

- a. No extension of time will be granted if this Alternate is accepted.
- b. The Owner reserves the right to accept this Alternate within thirty (30) days after the date of the Agreement.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION (Not Applicable)

*** END OF SECTION ***

SECTION 01310

PROJECT MANAGEMENT & COORDINATION

1.0 GENERAL

1.1 This Section describes the Contractor's responsibility to manage, supervise, and coordinate the Work for the Project.

1.2 RELATED SECTIONS

Part 3	Conditions of the Construction Contract
Section 01010	Summary of Work
Section 01011	Site Conditions
Section 01330	Submittals
Section 01700	Contract Closeout

1.3 MEASUREMENT AND PAYMENT

Payment shall be included as part of the appropriate lump sum or unit price item in the Bid. Any Work associated with this Section shall be considered incidental, unless a specific line item has been provided in the Bid Form.

1.4 PRECONSTRUCTION CONFERENCE

1.4.1 Before beginning the work and after the Contract has been awarded, the Engineer will conduct a Preconstruction Conference to discuss construction schedules and procedures, Contractor's use of the site, Contractor's use of existing facilities, Owner's regulations, and other matters deemed relevant to the effective performance of the work.

1.4.2 The conference will be attended by:

- * Contractor's Office Representative.
- * Contractor's General Superintendent.
- * Any subcontractor's or supplier's representative whom the Contractor may desire to invite or the Engineer may request.
- * The Owner's Representatives.
- * Funding Agent.

1.5 PROGRESS OF THE WORK

1.5.1 General

1.5.1.1 The work shall be performed at such times and in or on such parts of the project and with such forces, materials and equipment to prevent any delay to the completion of the project within the time limits stated in the Contract and in conformance with the Construction Schedule specified in Section 01330 – Submittals.

1.5.1.2 The Contractor may, through coordination with the Engineer and with written permission of the Owner and acquisition of all necessary permits and at his expense, work, outside regular hours. Regular work hours may vary with each Project but shall generally be the normal hours of operation. If multiple shifts or if Project does not include workers present then regular work hours shall be 7 a.m. to 7 p.m. or sunrise to sunset. He shall submit a written request to the Engineer and allow 7 days for satisfactory arrangements to be made for inspecting the work in progress. The Contractor shall comply with all applicable requirements of the Owner.

1.5.1.3 Comply with Engineer's procedures for communications: Submittals, reports and records, schedules, coordination drawings, and recommendations, and resolution of ambiguities and conflicts.

1.5.1.4 Comply with Engineer instructions for use of temporary utilities and construction facilities.

1.5.2 Progress Review Meeting

- 1.5.2.1 At intervals determined in the Pre-Construction Conference or as deemed necessary during Construction, a meeting will be held at which time the schedule will be reviewed. The meeting shall be attended by the Contractor's project manager and superintendent and those major subcontractors as determined by the Engineer to be necessary at the time.
- 1.5.2.2 Prior to a scheduled meeting, the Contractor shall obtain information to update the Construction Schedule to reflect progress to date. The updated schedule shall be available at the meeting for review. To update the Construction Schedule, the Contractor shall:
- a. Enter actual start and completion dates, days, number of shifts used for those activities started and/or completed during the previous reporting period.
 - b. For activities in progress, indicate the percentage complete to date. Review and revise as necessary the remaining duration of the work from the update to the estimated completion date.
 - c. For activities not yet started, review and revise as necessary the durations and estimated start and completion dates.
 - d. Add authorized Change Orders.
 - e. Updated status information shall be annotated on the Overall Schedule in a manner that the Overall Schedule shall graphically depict the current status of the work.
- 1.5.2.3 The monthly submittal to the Engineer shall be accompanied by a Narrative Report. The Narrative Report shall be brief and include the information described in Section 01330 – Submittals, Narrative Report Outline.

1.6 OPERATION OF EXISTING SYSTEM PROHIBITED

- 1.6.1 At no time undertake to close off any lines or open valves or take any other action which would affect the operation of the existing system, except as specifically required by the drawings and specifications and after approval is granted by the Owner. Request approval three working days in advance of the time that interruption of the existing system is required.

1.7 COORDINATION

- 1.7.1 Coordinate schedules, submittals and Work of the Individual Specification Sections to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later by the Contractor, by the Engineer or under separate contracts.
- 1.7.2 Verify that characteristics of elements of interrelated operating equipment are compatible; coordinate Work of Individual Specification Sections that have interdependent responsibilities for installing connection to and placing such equipment in service.
- 1.7.3 Coordinate with Engineer to insure that concealed Work is fully inspected and accepted before covering it up by further Work.
- 1.7.4 Coordinate access to site for correction of defective Work and Work not according to the Contract Documents. Minimize disruption to the User Agency's operations.
- 1.7.5 Coordinate completion and cleanup of work of the Individual Specification Sections in preparation for Substantial Completion.
- 1.7.6 Whenever the Work of a Subcontractor is dependent upon the Work of other Subcontractors, Contractors, or utility contractors installing utilities under contract, then the Contractor shall require the Subcontractor to:
1. Coordinate its Work with the dependent work.
 2. Provide dependent data and requirements.
 3. Supply and install items to be built into dependent work of others.
 4. Make provisions for dependent work of others.
 5. Examine dependent drawings, specifications and submittals.
 6. Examine previously placed dependent work.
 7. Check and verify dependent dimensions of previously placed work.

8. Notify Contractor of previously placed dependent work or dependent dimensions, which are unsatisfactory or will prevent a satisfactory installation of its Work.
 9. Not proceed with its Work until the unsatisfactory conditions have been corrected.
 10. Contractor shall require subcontractors to participate in coordination meetings as applicable to the Work or related Work being coordinated.
- 1.7.7 All Contractor personnel shall become familiar with operations at the site. Keep within the limits of the Work. Contractor personnel shall not enter any restricted or private areas.
- 1.7.8 This Work may involve performing activities in proximity to operations by others. The Contractor shall coordinate all Work with others that may affect their operations. The Engineer and Contractor will meet with the representative before starting any Work under this Contract.
- 1.7.9 Construction Access Routes and Areas:
1. Prevent interference with roads and access to other areas. Maintain and repair these areas damaged by the Contractor's or Subcontractor's operations. Return all areas used during the Work to their original condition.
 2. Coordinate all construction tasks that may require equipment to work in these access routes or areas.
 3. Do not store, park, or leave unattended any materials, vehicles or equipment in these areas unless authorized by the Property Owner and approved by the Engineer.
- 1.7.10 The location and elevation of existing utilities shown on the Drawings are approximate only. Additional utilities may exist that are not shown on the Drawings. Before starting construction, the Contractor will locate the existing utilities and verify points of possible conflict. If necessary, the Contractor shall be responsible for uncovering the utilities and protect them.
- 1.7.11 If utilities are found that are not in the Drawings or conflicts occur that require adjusting, refer to Section 01011 – Site Conditions Paragraph 1.4.9 and 1.4.10.
- 1.8 REQUEST FOR INFORMATION (RFIs)
- 1.8.1 General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI on the form specified.
- 1.8.2 Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Engineer.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
 14. Attachments shall be electronic files in Adobe Acrobat PDF format.
- 1.8.3 Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.

- 1.8.4 Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- 1.8.5 RFI Forms: Software-generated form with substantially the same content as indicated above, will be acceptable to the Engineer.
- 1.8.6 Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven (7) working days for Engineer's response for each RFI. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
- 1.8.7 If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify the Engineer in writing within ten (10) days of receipt of the RFI response.
- 1.8.8 On receipt of the Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within seven (7) days if Contractor disagrees with response.
- 1.9 SCHEDULES
- 1.9.1 Submit progress schedule covering Contractor's portion of the Work in accordance with Section 01330 – Submittals.
- 1.9.2 Whenever it becomes apparent from the current monthly progress evaluation and updated schedule data that the Contract completion date will not be met, the Contractor shall take some or all of the following actions:
1. Increase construction manpower in such quantities and crafts as shall substantially eliminate the backlog of work.
 2. Increase the number of working hours per shift, shifts per work day, work days per week, or the amount of construction equipment or any combination of the foregoing sufficient to substantially eliminate the backlog of work.
 3. Reschedule work items to achieve concurrency of accomplishment.
- 1.9.3 The addition of equipment or construction forces, increasing the working hours or any other method, manner or procedure to return to the current Overall Schedule shall not be considered justification for a Change Order or treated as an acceleration order.
- 1.10 CLOSEOUT PROCEDURES
- 1.10.1 Notify Engineer in writing when Work is considered ready for Substantial Completion. Accompany Engineer and Owner on preliminary inspection to determine items to be listed for completion or correction in Substantial Completion Certificate.
- 1.10.2 Comply with Engineer's instruction to correct items of work listed in executed certificates of Substantial Completion.
- 1.10.3 Notify Engineer when Work is considered finally complete. Accompany Resident Engineer on preliminary final inspection.
- 1.10.4 Comply with Engineer's instructions for completion of items of Work determined from Engineer's and Owner's final inspection.
- 2.0 **PRODUCTS** (Not Used)
- 3.0 **EXECUTION** (Not Used)

*** END OF SECTION ***

SECTION 01330 SUBMITTALS

1.0 GENERAL

1.1 The Work in this Section outlines the general requirements for items the Contractor must prepare or assemble for submitting during the Project. There is no attempt herein to state all of the procedures and requirements for each submittal. The Contractor's attention is directed to the documents referenced below in Related Sections and included in these Contract Documents which may contain in detail additional and special submittal requirements. The Engineer reserves the right to direct and modify the procedures and requirements for submittals as necessary to accomplish the specified purpose of each submittal. Should the Contractor be in doubt as to the procedure, purpose, or extent of any submittal, they should direct their inquiry to the Engineer.

1.1.1 All submittals shall be addressed to the Engineer at the address provided on the cover of the Project Manual, unless otherwise directed during the Pre-Construction Conference.

1.1.2 This Section includes administrative and procedural requirements for submittals for performance of the Work, including the following:

A. Administrative Submittals: Refer to other Division 01 Sections and Part 3 the Conditions of the Contract for requirements for administrative submittals. Such submittals may include, but are not limited to, the following:

1. Schedule of Values
2. Construction Schedule
3. Schedule of Submittals
4. Permits
5. Pre- and Post-Construction Video
6. Applications for Payment
7. Narrative Report
8. Record Drawings

B. Technical Submittals: Refer to Division 02 through 16 for requirements for each technical specification. Such submittals may include, but are not limited to, the following:

1. Product Data
2. Quality Assurance
3. Contract Close-out
4. Warranty
5. Shop Drawings
6. Audio/Video Recordings

1.2 RELATED SECTIONS

- Part 2 Contract Forms
- Part 3 Conditions of the Contract
- Part 4 Technical Specifications

1.3 MEASUREMENT AND PAYMENT

1.3.1 Payment shall be included as part of the appropriate lump sum or unit price item in the Bid. Any Work associated with this Section shall be considered incidental, unless a specific line item has been provided in the Bid Form.

1.3.2 The Contractor shall make required submittals promptly. Failure to comply with this requirement may result in the withholding of progress payments and make the Contractor liable for other prescribed action and sanctions.

- 1.3.3 With regards to Payment Applications, the Contractor shall be required to submit with their Payment Application a current certificate of insurance, updated construction schedule, and an updated narrative report. Failure to include all documents listed may result in the Payment Application being returned without review.
- 1.3.4 The cost of any reproductions and resubmittals shall be considered incidental and included in the Contractor's bid.
- 1.4 DEFINITIONS
- 1.4.1 Coordination Drawings show the relationship and integration of different construction elements that require careful coordination during fabrication and installation to fit in the space provided or to function as intended.
- 1.4.2 Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.
- 1.4.3 Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.
- 1.5 ADMINISTRATIVE SUBMITTALS
- 1.5.1 Schedule of Values
- A. The Contractor's Schedule of Values shall only be required for Lump Sum Bid Projects or Lump Sum Bid Items within a Unit Price Bid. For Unit Price Bid Projects, a Schedule of Values will not be required. However, the value of a lump sum item within a unit price bid may be required to be broken out for the purpose of substantiating payment.
- B. For lump sum Bids, submit Schedule of Values on the electronic Pay Application form provided at the Pre-Construction Conference. The AIA Document G703A may not be used without prior written approval. For unit price bids, the bid items will be submitted on the electronic Pay Application form provided at the Pre-Construction Conference.
- C. Submit the Schedule of Values to the Engineer at least ten (10) days after receiving the Notice of Award. Upon Engineer's request, support the values provided with substantiating data.
- D. Preparing Schedule of Values for Lump Sum Bids:
1. Itemize separate line item cost for each of the following general cost items: Performance and Payment Bonds, field supervision and layout, and temporary facilities and controls.
 2. Itemize separate line item cost for Work required by each section of this Specification. Break down installed cost with overhead and profit.
 3. For each line item which has installed value of more than \$20,000, break down costs to list major products or operations under each item, rounding figures to nearest dollar. Make sum of total costs of all items listed in schedule equal to total Contract Amount.
 4. At the Engineer's discretion, unit price bid items may be required to be broken down to values less than \$20,000.
- E. Review and Resubmittal: After Engineer's review, if requested, revise and resubmit Schedule until accepted.
- 1.5.2 Construction Schedule
- A. The Contractor shall prepare a fully developed, horizontal bar-chart-type size no less than 11x17 (tabloid), Contractor's Construction Schedule including all Work in the Contract. Submit Preliminary Schedule ten (10) days after the date of Notice of Award and Contract Schedule for approval within 10 days after the date of Notice to Proceed. No Work shall commence on site until an approved schedule has been received by the Engineer.

- B. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the unit price bid line items or the "Schedule of Values" from the lump sum bid, approved by the Engineer.
- C. Within each time bar, place a contrasting mark in each bar to indicate Actual Completion.
- D. Prepare the schedule on a sheet, or series of sheets, on reproducible media, of sufficient width to show legible data for the entire construction period.
- E. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the work and graphically indicate the critical path.
- F. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
- G. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Engineer's procedures necessary for certification of Substantial Completion.
- H. Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.
- I. Following response to the initial submittal, print and distribute copies to the subcontractors and other parties required to comply with the schedules dates. Post copies in the Project meeting room and temporary field office, if available. When revisions are made, distribute to the same parties and post in the same locations.
- J. Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with each payment application or monthly whichever comes first.
- K. Comments made by the Engineer on the schedule, or lack of such comments, or rejection or non rejection of the Contractor's schedule does not relieve the Contractor from compliance with requirements of the Contract Documents, nor do they create any responsibility or duty for scheduling owed from the Owner, or the Engineer to the Contractor. This review, whether accompanied by comments, rejection, or neither, is only for general conformance with the schedule concept of the project and general compliance with the information given in the Contract Documents.

1.5.3 Schedule of Submittals

The Contractor shall provide a schedule listing each Submittal required in the Contract Documents in a workable arrangement, including the specification section number and description, for reviewing and processing each Submittal. The Schedule of Submittals shall be received from the Contractor and approved by the Engineer prior to the Engineer's review of any Submittals.

1.5.4 Permits

The Contractor shall be required to apply for building/construction permits for the Project as required. The cost of the permit shall be incidental to the Project unless an allowance has been provided in the Bid Form. Projects for public entities shall still require a permit from their building/planning department. Such permits may be at no cost to the Contractor (e.g. the City's Building Department may not require payment for their project permit within their jurisdiction.). The Contractor shall be required to verify all permit cost prior to submitting their Bid.

1.5.5 Pre- and Post-Construction Video

The Contractor shall furnish all labor, materials and equipment to furnish color audio video recorded survey of the project site as specified herein.

- A. An original and two (2) copies of a continuous color audio video recording of the entire area within fifty (50) feet of the construction area.
1. Pre-Construction: The recording shall clearly and completely describe existing conditions throughout the entire area. The recording shall be made jointly under the direction of the Contractor and the company of the Engineer. The Contractor shall be equipped to record either interior or exterior exposures.
 2. Post-Construction: The recording shall clearly and completely describe the new conditions throughout the entire area and be recorded along the same path/area and sequence as the pre-construction recording.
- B. The recording shall be taken prior to any construction activity and after project completion.
- C. The recordings shall be submitted on Digital/Video Disc (DVD) or flash drive. Recording shall be playable on Windows Media Player software without the need to download additional software or codecs. The Engineer reserves the right to reject the submittal because of incompatible video formats.
- D. The Engineer reserves the right to reject the audio video recording because of poor quality, unintelligible audio or uncontrolled pan or zoom. Any recording rejected by the Engineer shall be rerecorded at no cost to the Owner. Under no circumstances shall construction begin until the Engineer has received and accepted the audio video DVD(s).
- E. Complete coverage shall include all surface features within 50' of the work area to be utilized by CONTRACTOR and shall be supported by appropriate audio description made simultaneously with video coverage. Such coverage shall include, but not be limited to, all existing driveways, sidewalks, curbs, ditches, roadways, landscaping, trees, culverts, headwalls, retaining walls, equipment, buildings, structures, pavements, manholes, vaults, handrails, etc. located within the aforementioned work zone. Video coverage shall extend to the maximum height of all structures within this zone.
- F. All recording shall be done during times of good visibility. No recording shall be done during periods of visible precipitation, or when more than ten percent of the ground area is covered with standing water, unless otherwise authorized by Engineer.
- G. Each recording shall include the Owner's name, Contract name and number, CONTRACTOR's name, date and location information such as street name, direction of travel, viewing side, etc.
- H. Information appearing on the recording submittal must be continuous and run simultaneously by computer generated transparent digital information. No editing or overlaying of information at a later date will be acceptable. Time must be accurate and continuously generated.
- I. Digital information to appear in the bottom right corner shall be as follows:
1. Day, date and time
- J. Audio information to be provided at the beginning on each recording:
1. Name of Contractor and Company Recording
 2. Name of Project and Job Number
 3. Name of Attendees Present during Recording
- K. All DVDs, flash drives, and boxes shall bear labels with the following information:
1. DVD Number
 2. Owner's Name
 3. Date of Recording
 4. Project Name and Number
 5. Location and Standing Limit of Recording
- L. Written documentation must coincide with the information on the recording so as to make easy retrieval of locations sought for at a later date.

- M. Audio shall be recorded at the same time as the video recording and shall have the same information as on the viewing screen. Special commentary shall be given for unusual conditions of buildings, sidewalks and curbing, foundations, trees and shrubbery, structures, equipment, pavement, etc.
- N. Prior to commencement of audio video recording, CONTRACTOR shall notify the Engineer in writing when and where the audio video recording will begin. The Engineer may provide a designated representative to accompany and oversee coverage of all recording operations. Audio video recording completed without an Engineering representative present will be unacceptable unless specifically authorized by the Engineer.

1.5.6 Applications for Payment

- A. Applications for Payments will be prepared and submitted on electronic Pay Application forms provided at the Pre-Construction Conference.
- B. Preparation of Application: Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of Work performed and for stored products. List each authorized Change Order as an extension at the bottom of the schedule of values on the continuation sheet and top of the application, include Change Order number and dollar amount as for an original Item of Work. Complete the percentage of Project Completion by the time and Contract value. Execute certification by signature of authorized signature.
- C. Submittal Procures: Submit three copies of each Application for Payment with the Contractor's original signature. Include an updated construction schedule, a Narrative Report Outline, and Certificate of Insurance with each request for payment at monthly intervals. Job Progress Drawings / Record Drawings may also be requested with Pay Applications. The request for Job Progress Drawings will be at the discretion of the Engineer. The inability of the Contractor to provide Job Progress Drawings in compliance with this Section will be justification to withhold payment.
- D. Substantiating Data: Submit data justifying dollar amounts in questions when such information is requested by the Engineer. Provide one (1) copy of the data with a cover letter for each submittal. Indicate the Application number, date and line item number and description.

1.5.7 Narrative Report

- A. Provide a Narrative Report with each schedule submission of Pay Application. The Narrative Report is expected to communicate to the Engineer/Owner their analysis of the schedule output and the plans to compensate for any problems either current or potential, which are revealed through that analysis. A sample Narrative Report has been provided at the end of this Section for reference. Narrative Report shall include the following minimum information:
 - 1. Schedule narrative referring to each activity on the Overall Schedule including:
 - 2. Description of any problem areas.
 - 3. Current and anticipated delays.
 - 4. Change in construction sequence.
 - 5. Pending items and status thereof.
 - 6. Contract completion date status.
 - 7. Other project or scheduling concerns.
 - 8. Including reviewed and updated Overall Schedule.
 - 9. Progress Quality Chart (if required).
 - 10. Revised cash flow information.
- B. If at any time during the project, the Contractor fails to complete any activity by its latest completion date, he will be required, within 7 days, to submit to the Engineer a written statement as to how and when he plans to reorganize his work force to return to the current.

1.5.8 Record Drawings / Job Progress Drawings

- A. The Contractor shall provide and maintain at the site two sets of full size prints on the jobsite, one set designated "Job Progress Drawings" and the second set designated "Record Drawings". The Contractor shall contemporaneously maintain both sets in a condition which reflects the current status of the construction work.

Both sets shall be available to the Engineer for inspection and copying during the progress of the work. All markings shall be neatly performed with red pencil or ink.
- B. The Job Progress Drawings shall be marked up to show all work complete in weekly intervals, and the week the work is performed shall be shown.
- C. The Record Drawings will be marked up as required to show all deviations from the original contract drawings including changes resulting from minor field adjustments, field orders, and Contract modifications. Changes should be drawn after the construction work is completed and all new locations, dimensions, and elevations shall be shown. Where larger scale presentation is required, the Contractor shall prepare additional drawings and attach them to the appropriate prints.
- D. The Contractor shall maintain at the site one record copy of all drawings, specifications, addenda, change orders, and other modifications, in good order and marked currently to record all changes made during construction; and shall maintain at the site reviewed shop drawings, product data, and samples. These shall be available to the Engineer and shall be delivered for the Owner upon completion of the work and during construction at time of submission of payment application, upon A/E requests. Failure to maintain and submit record drawings may be subject to withholding payment due to the Contractor until document markings are current with status of project.
- E. Each month, or as otherwise agreed, the Contractor shall submit to the Engineer, a current listing and description of each deviation incorporated into the work since the preceding submittal.
- F. Failure to submit the record drawing information shall be cause for withholding any partial payment due the Contractor.
- G. At the completion of the work but before Substantial Completion, both the Job Progress Drawings and Record Drawings sets of prints shall be submitted to the Engineer.

1.6 TECHNICAL SUBMITTALS

1.6.1 General

- A. Requirements in this section are in addition to any specific requirements for submittals specified in other divisions and sections of these Contract Documents.
- B. All Submittals shall be submitted by and received from the General Contractor, who shall indicate by a signed stamp on the shop drawings, or other acceptable means, that the Contractor has checked and approved the submittals, and that the work shown is in accordance with the Contract Documents and has been checked for relationship and coordinated with other work. The practice of submitting incomplete or unchecked submittals for the Engineer to correct or finish will not be acceptable, and submittals which, in the opinion of the Engineer, indicate that they have not been checked by the Contractor will be returned to the Contractor for resubmission in the proper form and with complete information.
- C. Data submitted shall have sufficient detail for determination of compliance with the Contract Documents.
- D. No equipment or material for which listings, drawings, or descriptive material are required shall be fabricated, purchased, or installed until the Engineer has on hand copies of such approved lists and the appropriately stamped final shop drawings.
- E. Material and equipment installed, purchased, furnished, or provided for the Project which has not been submitted and reviewed by the Engineer may be ordered removed and acceptable material and equipment installed in its place at no additional cost to the Owner.

- F. When submittals have been reviewed electronically, a pdf copy will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the submittal may be rejected and will be returned to the Contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit in the same manner and quantity as specified for the original submittal. If changes are made by the Contractor (in addition to those requested by the Engineer) on the resubmitted submittal, such changes shall be clearly explained by the Contractor in a transmittal letter accompanying the re-submittal.

1.6.2 Substitutions

- A. The Engineer will not pre-approve substitutions prior to Bid.
- B. When substitute equipment is proposed, clearly and unambiguously mark submitted material describing the substitute to identify the differences between the qualities and characteristics of the offered substitute and the specified material. A standard form will be provided by Engineer for each request. A sample Substitution Form has been included at the end of this Section. Failure to provide the form and the identification of differences when substitutes are submitted for consideration will result in rejection of the proposed material. The Engineer shall not be responsible for researching or collecting data as required to justify the proposed substitution meets or exceeds the specifications.
- C. Review of substitutions, schedules and lists of materials submitted or requested by the Contractor shall not add to the Contract amount, and any additional costs that may result therefrom shall be solely the obligation of the Contractor.
- D. When equipment substitutions are approved and that equipment alters the design or space requirements indicated on the plans, the Contractor shall pay for all items of cost for the revised design and construction including costs of other trades involved and any engineering required to incorporate the approved substituted equipment into the Project. Owner shall not pay for the required additional costs.

1.6.3 Shop Drawing

- A. The Contractor shall submit to the Engineer for his review, one (1) pdf copy of Shop Drawings 11"x17" or larger including catalog cuts for fabricated items. Shop Drawings shall be accurate, distinct, and complete, and shall contain all required information, including satisfactory identification of items, units, and assemblies in relation to the applicable parts of these Contract Documents.
- B. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents in whole or in part or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project will not be accepted as a Shop Drawing.
- C. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
 - 1. Dimensions.
 - 2. Identification of products and materials included by sheet and detail number.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurement.
 - 6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 11 by 17 inches but no larger than 24 by 36 inches unless otherwise required to comply with this Section.
 - 7. Do not use Shop Drawings without an appropriate final stamp indicating action taken.
- D. The review of shop drawings and catalog cuts by the Engineer will not relieve the Contractor from responsibility for correctness of dimensions, fabrication details, and space requirements, or for deviations from the drawings or specifications, unless the Contractor has called attention to such deviations in writing by a letter accompanying the shop drawings and the Engineer approves the change or deviation in writing at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the

shop drawings. When the Contractor does call such deviations to the attention of the Engineer, the Contractor shall state in his letter whether or not such deviations cause any deduction or extra cost adjustment.

- E. The Contractor agrees that shop drawing submittals processed by the Engineer do not become Contract Documents and are not Change Orders; that the purpose of the shop drawing review is to establish a reporting procedure and is intended for the Contractor's convenience in organizing his work and to permit the Engineer to monitor the Contractor's progress.

1.6.4 Product Data

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notations of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 3. Preliminary Submittal: Submit a preliminary single copy of Product Data where selectin of options is required.
 4. Submittals: Submit 5 copies of each required submittal; submit 7 copies where required for maintenance manuals. The Engineer will retain one and will return the other marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.6.5 Audio/Video Recordings

- A. Audio/Video recordings shall conform to the requirements of Paragraph 1.5.5.

1.6.6 Certificates of Compliance

- A. A Certificate of Compliance shall be furnished for materials specified to a recognized standard or code prior to the use of any materials specified for the work. The Engineer may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The Certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and state that the materials comply in all respects with the requirements of the specifications. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the Certificate.
- B. All material used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the work that conforms to the requirements of the Contract Documents and any such material not conforming to the requirements will be subject to rejection whether in place or not.
- C. The Engineer reserves the right to refuse permission for use of material on the basis of a Certificate of Compliance.

1.6.7 Quality Assurance Submittals

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
 - 1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.
- C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Section 01400 – Quality Control.

1.6.9 Contract Closeout

- A. Contractor shall submit Contract Closeout Documentation as outlined in Section 01700 – Contract Closeout.

1.6.10 Warranties

- A. Contractor shall provide standard one-year warranty from the date of Substantial Completion for construction of the Project, or a longer period of time as Contract Documents warrant.
- B. Specific product warranties may extend beyond the one-year construction warranty. Additional warranty requirements are outlined in the specific Technical Specifications. Submit warranty certification meeting requirements upon Project Completion.
- C. The date on which all Warranties commence shall be the date of Substantial Completion for the applicable Work/Product.

2.0 PRODUCTS (Not Used)

3.0 EXECUTION

- 3.1 The Contractor shall provide all of the submittals required by the Bidding Requirements, the GENERAL CONDITIONS, the SUPPLEMENTARY CONDITIONS, Division 1, GENERAL REQUIREMENTS, and as may be specifically required elsewhere in these Contract Documents.
- 3.2 The Contractor shall submit to the Engineer a copy of all correspondence relative to the Contract, transmitting notifications, reports and certifications.
- 3.3 The Owner shall not be responsible for providing engineering or other services to protect the Contractor from additional costs accruing from such approvals.
- 3.4 The Owner is not precluded, by virtue of review, acceptance, or approval, from obtaining a credit for construction savings resulting from allowed concessions in the work or materials therefor.
- 3.5 Submittals will be acted upon by the Engineer as promptly as possible, and in all cases within 20 days of receipt and returned to the Contractor. Delays caused by the need for resubmittals shall not constitute reason for an extension of Contract time.

3.6 SUBMITTAL PROCEDURES

- 3.6.1 Each submittal will be accompanied by the Transmittal of Construction Submittals form provided during the Pre-Construction Conference.
- 3.6.2 For easy tracking, the first submittal will be numerical (such as No. 1) and any re-submittal will be followed by a letter. For example, the second submittal of Submittal No. 1 would be No. 1A. If there is a possibility of a third submittal, it would be numbered Submittal No. 1B and so on. All submittals must identify the applicable

specification section and a description of the contents. Multiple submittals transmitted under the same cover shall identify each applicable specification section.

- 3.6.3 Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
- 3.6.4 Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
1. Review time for each submittal/resubmittal shall be as per Paragraph 3.5.
 2. Allow additional time if the Engineer must delay processing to permit coordination with subsequent submittals.
 3. If an intermediate submittal is necessary, process the same as the initial submittal.
 4. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the Work to permit processing.
- 3.6.5 Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4 by 5 inches on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of the Engineer.
 - d. Name and address of the Contractor.
 - e. Name and address of the Subcontractor.
 - f. Name and address of the Supplier.
 - g. Name of the Manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
- 3.6.6 Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Engineer using the Submittal Transmittal form provided to the Contractor at the Pre-Construction Conference.
- 3.7 Engineer's Action
- A. Except for submittals for the record or information, where action and return is required, the Engineer will review each submittal, mark to indicate action taken, and return promptly.
 - B. The Engineer will not accept submittals received from sources other than the Contractor. The Engineer will not accept submittals that have not been reviewed first by the Contractor and marked as reviewed.
 - C. Unsolicited Submittals: The Engineer will return unsolicited submittals to the sender without action.
 - D. Action Stamp: The Engineer will stamp each submittal with a uniform, action stamp. The Engineer will mark the stamp appropriately to indicate the action taken, as follows:
 1. "No Exceptions Noted" – denotes that the submittal generally meets the requirements of the Contract Documents. "No Exceptions Noted" does not indicate a review of the Contractor's design except for general compliance with the requirements of the Contract Documents.

2. "Make Corrections Noted" – denotes review is conditional on compliance with notes made on the submittal.
3. "Revise and Resubmit" – denotes that revisions are required in the submittal in order for the submittal to be generally consistent with the requirements of the Contract Documents. Required revisions will be identified to the Contractor.
4. "Rejected" – denotes that the submittal does not meet the requirements of the Contract Documents and shall not be used in the Work. Reasons for rejection will be identified to the Contractor.
5. "Submit Specified Item" – denotes that the submittal excludes a specific item required to complete the Engineer's review.

*** END OF SECTION ***

NARRATIVE REPORT OUTLINE

1. Contractor's transmittal letter.
2. Schedule narrative referring to each activity on the Overall Schedule including:
 - a. Activities completed this reporting period.
 - b. Activities in progress this reporting period.
 - c. Activities schedule next reporting period.
3. Description of any problem areas.
4. Current and anticipated delays.
 - a. Cause of the delay.
 - b. Corrective action and schedule adjustments to correct the delay.
 - c. Impact of the delay on other activities, milestones and completion dates.
5. Change in construction sequence.
6. Pending items and status thereof.
 - a. Permits.
 - b. Change Orders.
 - c. Time extensions.
 - d. Other.
7. Contract completion date status.
 - a. Ahead of schedule and number of days.
 - b. Behind schedule and number of days.
8. Other project or scheduling concerns.
9. Including reviewed and updated Overall Schedule.
10. Progress Quality Chart (if required).
11. Revised cash flow information.
12. Other.

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

1.0 GENERAL

1.1 The Work in this Section includes providing all labor, materials, tools, and equipment necessary for providing temporary facilities and controls as listed below:

1.1.1 Temporary utilities include, but are not limited to, temporary water service and distribution; temporary sanitary facilities including drinking water; temporary electric power and lighting services; temporary heating, cooling and ventilation; and temporary telephone service and data.

1.1.2 Support facilities include, but not limited to, collection and disposal of waste and cleaning; temporary project identification signs; temporary exterior lighting; storage and fabrication sheds; temporary enclosures; field offices – Construction Manager, Subcontractor, Owner, and Construction Administrator; temporary lifts, joists and elevated use; and stairs.

1.1.3 Security and protection facilities include, but are not limited to, protection; barricades, warning signs, and lights; traffic ways; security for site and Agency; enclosure fence; security enclosure and lockup; identification badges/apparel for Construction personnel; and temporary fire protection.

1.2 **RELATED SECTIONS**

Division 01	General Requirements
Section 01016	Protection of Property
Section 01700	Contract Closeout
Section 02200	Earthwork

1.3 **MEASUREMENT AND PAYMENT**

1.3.1 Unless a specific line item has been provided in the Bid Form, any Work associated with this Section shall be considered incidental.

1.3.2 If a specific line item has been provided in the Bid Form, payment shall be made at the appropriate Contract lump sum or unit price item. Payment for work in this section shall be included in the lump sum or unit price bid to which it is subsidiary.

1.3.3 Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner’s construction forces, Engineer, occupants of the Project, testing agencies, and authorities having jurisdiction.

1.3.4 Any cost associated with sewer service, water service, and electric power service for usage by all entities for construction operations shall be paid by the Contractor.

1.3.5 Water and Sewer Service from Existing System: Water from Owner’s existing water system is available for use without payment of use charges. Owner may request metering of water usage for internal tracking. Coordinate with Owner for metering requirements. Provide connections and extensions of services as required for construction operations.

1.3.6 Electric Power Service from Existing System: Electric power from Owner’s existing system is available for use without payment of use charges. Owner may request metering of power usage for internal tracking. Coordinate with Owner for metering requirements. Provide connections and extensions of services as required for construction operations.

1.4 RELATED SECTIONS

NFPA 241	Standard for Safeguarding Construction, Alteration, and Demolition Operations
ANSI A10	Series Standards – Safety Requirements for Construction and Demolition
ICC/ANSI A117.1	Accessible and Usable Buildings and Facilities
NECA 200	Recommended Practice for Installing and Maintaining Temporary Electric Power at Construction Sites
NFPA 70	National Electrical Code
OSHA	Occupational Safety and Health Administration
IBC	International Building Code
ADA	Americans with Disabilities Act
ABA	Architectural Barriers Act
MUTCD	Manual of Uniform Traffic Control Devices
NECA	National Electrical Contractors Association
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Prevention Association
UL	Underwriters Laboratories

1.5 SUBMITTALS

The following shall be submitted in accordance with “Section 01330 – Submittals”, in sufficient detail to show full compliance with the specification:

SD-01 Quality Control: Provide copy of notification to authorities having jurisdiction and utility companies for intent to connect to services. Provide the required certifications and permits from each authority having jurisdiction.

SD-02 Pre-Construction: Provide site plan indicating location of temporary facilities, utility hookups, staging areas, and parking areas prior to starting construction.

1.6 QUALITY ASSURANCE

- 1.6.1 Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, utility company regulations; environmental protection regulations; police, fire department, and rescue squad rules; health and safety regulations; Americans with Disabilities Act; and building and fire code requirements.
- 1.6.2 Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- 1.6.3 Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
- 1.6.4 Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- 1.6.5 Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner and do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

2.0 **PRODUCTS**

2.1 MATERIALS

- 2.1.1 Provide materials, undamaged, in serviceable condition, and suitable for use intended. If not acceptable by Engineer, Contractor shall provide new materials and any cost shall be considered incidental.

2.2 EQUIPMENT

- 2.2.1 Provide equipment, undamaged, in serviceable condition, and suitable for use intended. If not acceptable by Engineer, Contractor shall provide new equipment and any cost shall be considered incidental.

2.3 TEMPORARY FENCING

- 2.3.1 Minimum 2-inch, 0.148-inch thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with galvanized barbed-wire top strand.

3.0 **EXECUTION**

3.1 INSTALLATION

- 3.1.1 Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

3.2 TEMPORARY UTILITY INSTALLATION

- 3.2.1 Water Service: Install water service and distribution piping in sizes and pressures adequate for construction. Exercise measures to conserve water. Extend branch piping with outlets located so water is available by hoses with threaded connections, as necessary. Use trigger-operated nozzles for water hoses, to avoid waste of water. Provide temporary pipe insulation to prevent freezing, as necessary. Install meter if requested by Owner.

- 3.2.2 Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. Provide adequate number of facilities for use by all persons and trades employed on Work during construction period. Maintain daily in clean and sanitary condition.

- 3.2.3 Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

- 3.2.3.1 Provide and maintain lighting for construction operations to achieve a minimum lighting level of 10 foot candles.

- 3.2.3.2 Provide and maintain 2 foot candles lighting to exterior staging and storage areas after dark for security purposes.

- 3.2.3.3 Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

- 3.2.3.4 Maintain lighting and provide routine repairs.

- 3.2.3.5 Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

- 3.2.3.6 Provide superintendent with cellular telephone for use when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

- 3.3.1 Vehicular Access and Parking: Conduct the Work so as to ensure the least possible obstruction to vehicular traffic and inconvenience to the general public and the residents in the vicinity of the work and to ensure the protection of persons, property and natural resources. No road or street shall be closed to the public except with the permission of the Owner/Engineer and the proper governmental authority.

1. Parking of vehicles on lawns, parkways, walks, etc. outside of construction area will not be permitted.
2. Brief and temporary stopping within the Public Right-of-Way will be permitted to load or unload equipment or materials used in the construction process. Do Not under any circumstances, leave any vehicle unattended with motor running, or with ignition key in-place.

- 3.3.2 Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas on Drawings. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

- 3.3.3 Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for

construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Section 02200 – Earthwork.
 3. Recondition base after temporary use, including removing contaminated material, regrading, proof rolling, compacting, and testing.
 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion or as directed by Engineer.
- 3.3.4 Traffic Controls: Comply with requirements of the Drawings, the authorities having jurisdiction, and the MUTCD, see also Traffic Control Plan.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for emergency vehicles at all times and access to fire hydrants.
- 3.3.5 Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
- 3.3.6 Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.
- 3.3.7 Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
- 3.3.7.1 Provide Project identification sign of design and construction indicated on Drawings, if required.
- 3.3.7.2 Comply with requirements of authorities having jurisdiction.
- 3.3.7.3 Provide other signs as indicated and as required informing public and individuals seeking entrance to Project.
- 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION
- 3.4.1 Security: Provide security and facilities to protect Work, existing facilities, vandalism, and theft from unauthorized entry. Securing the Project will be at the Contractor's expense.
- 3.4.4 Fire Protection
- 3.4.4.1 Prohibit smoking on Owner's property.
- 3.4.4.2 Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
- 3.4.4.3 Develop and supervise an overall fire-prevention and –protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
- 3.4.4.4 Take all precautions to prevent possibility of fire resulting from construction operations. Particularly avoid hazardous accumulations of rubbish and unsecured, flammable materials.
- 3.4.4.5 Provide emergency fire extinguishing equipment of adequate type and quantity, readily available and properly maintained.
- 3.4.5 Temporary First Aid Facilities: Provide adequate first aid facilities for construction personnel.
- 3.4.6 Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Refer also to Section 01016 – Protection of Property.

- 3.4.7 Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of EPA Construction General Permit.
1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- 3.4.8 Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- 3.4.9 Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- 3.4.10 Barricades, Warning Signs, and Lights: comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- 3.5 TERMINATION AND REMOVAL
- 3.5.1 Termination and Removal: Remove each temporary facility when needed for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion.
- 3.5.2 Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility.
- 3.5.3 Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
- 3.5.4 Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves rights to take possession of Project identification signs.
- 3.5.5 Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction.
- 3.5.6 Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
- 3.5.7 Where area is intended for landscape development, remove soil aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns.
- 3.5.8 At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01700 – Contract Closeout.

*** END OF SECTION ***

SECTION 01600
**MATERIAL & EQUIPMENT SHIPMENT, HANDLING,
PROTECTION & STORAGE**

1.0 **GENERAL**

1.1 This section describes the Contractor's responsibilities as it relates to material and equipment transportation, handling, storage, and protection to the Project Site.

1.2 RELATED SECTIONS

Division 01 General Requirements

1.3 MEASUREMENT AND PAYMENT

Payment shall be included as part of the appropriate lump sum or unit price item in the Bid. Any Work associated with this Section shall be considered incidental unless a specific line item has been provided in the Bid Form.

1.4 QUALITY ASSURANCE

1.4.1 Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

1.5 DELIVERY, STORAGE & HANDLING

1.5.1 Packing and Shipping – Transport and handle Products in accordance with manufacturer's instructions.

1.5.2 Acceptance at Site

1.5.2.1 Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged. Provide Bill of Laden upon Engineer's request.

1.5.2.2 Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.5.3 Storage and Protection

1.5.3.1 Store and protect Products in accordance with manufacturers' instructions. Store with seals and labels intact and legible.

1.5.3.2 Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.

1.5.3.3 For exterior storage of fabricated Products, place on sloped supports above ground.

1.5.3.4 Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation, degradation, or oxidation of Products.

1.5.3.5 Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

1.5.3.6 Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

2.0 **PRODUCTS** (Not Applicable)

3.0 **EXECUTION** (Not Applicable)

*** END OF SECTION ***

SECTION 01700 CONTRACT CLOSEOUT

1.0 GENERAL

1.1 The Work in this Section includes administrative and procedural requirements for contract closeout including, but not limited to, Substantial Completion procedures, Final Completion procedures, Warranties, Final Cleaning and Repair of Work.

1.2 RELATED SECTIONS

Part 3 Conditions of the Contract
Division 01 General Requirements

1.3 MEASUREMENT AND PAYMENT

1.3.1 Payment shall be included as part of the appropriate lump sum or unit price item in the Bid. Any Work associated with this Section shall be considered incidental, unless a specific line item has been provided in the Bid Form.

1.3.2 Final payment will be made to the Contractor in accordance with the General Conditions.

1.4 SUBMITTALS

The following shall be submitted in accordance with Section 01330 – Submittals, in sufficient detail to show full compliance with the specification:

SD-01 Statement of Substantial Completion: Provide a written statement that Work has been provided in accordance with the Contract and is, in the opinion of the Contractor, Substantially Complete and ready for inspection. Contractor shall include any Work that is incomplete or outstanding and the reason why it is incomplete. Prior to receiving this submittal, the Engineer strongly encourages the Contractor to request an informal walk through of the Project for the Engineer to observe the level of completion.

SD-02 Record Drawings: Submit per Section 01330 – Submittals, Paragraph 1.5.8 Record Drawings / Job Progress Drawings.

SD-03 Post-Construction Video: Submit per Section 01330 – Submittals, Paragraph 1.5.5 Pre- and Post-Construction Video.

SD-04 Operation and Maintenance (O&M) Manuals: Submit per Section 01330 – Submittals, Paragraph 1.6.6 Operation and Maintenance (O&M) Manuals.

SD-05 Contractor's Guarantee: Submit per Section 01330 – Submittals. Contractor shall provide a letter guaranteeing all Work performed under the Contract to be free of defective materials and workmanship for a period of 1-year from the date of Substantial Completion.

SD-06 Waiver of Liens: Contractor shall provide a statement that No Liens are present on the Project and all payment to entities outside the Contract has been made.

SD-07 Consent of Surety: Contractor shall provide certification from Surety agreeing to final payment on the Project.

SD-08 Asbestos Free Material: Contractor shall provide a written and notarized statement on company letterhead(s) to certify and warrant that ONLY ASBESTOS FREE MATERIALS AND PRODUCTS were provided as required in this Project.

1.5 ASBESTOS FREE MATERIAL

- 1.5.1 Contractor shall provide a written and notarized statement on company letterhead(s) to certify and warrant that ONLY ASBESTOS FREE MATERIALS AND PRODUCTS were provided as required in this Project. Such statement shall be submitted with the final payment request. Final payment shall not be made until such statement is submitted.
- 1.5.2 Contractor agrees that if materials containing asbestos are subsequently discovered at any future time to have been included in the Project, the Contractor shall be liable for all costs related to the redesign or modification on the construction of the Project so that materials containing asbestos are removed from the facility. If construction has begun or has been completed pursuant to a design that includes asbestos containing materials, the Contractor shall also be liable for all costs related to the abatement of such asbestos.

1.6 GUARANTEES, BONDS AND AFFIDAVITS

- 1.6.1 No application for final payment will be accepted until all guarantees, bonds, certificates, licenses, and affidavits required for work or equipment as specified are satisfactorily filed with the Engineer.

1.7 RELEASE OF LIENS AND CONSENT OF SURETY

- 1.7.1 No application for final payment will be accepted until satisfactory evidence of Release of Liens and Consent of Surety to Final Payment has been submitted to the Owner.

2.0 PRODUCTS

2.1 MATERIALS

- 2.1.1 Cleaning Agents: Using cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

3.0 EXECUTION

3.1 SUBSTANTIAL COMPLETION PROCEDURES

- 3.1.1 Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, video documentation, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number where applicable.
 5. Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Engineer's signature for receipt of submittals.
 6. Submit test/adjust/balance records.
 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

- 3.1.2 Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 2. Complete final cleaning requirements, including touchup painting.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 6. Touchup and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 9. Advise Owner of pending insurance changeover requirements.
 10. Advise Owner of changeover in heat and other utilities.

- 3.1.3 Inspection: Submit a written for inspection to determine Substantial Completion a minimum of seven (7) days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate or Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

3.2 FINAL COMPLETION PROCEDURES

- 3.2.1 Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 01330 – Submittals.
2. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.

- 3.2.2 Submit a written request for final inspection to determine acceptance of a minimum of Work completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request for reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

3.3 SUBMITTAL OF PROJECT WARRANTIES

- 3.3.1 Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

- 3.3.2 Partial Occupancy: Submit properly executed warranties within 15 days 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.
- 3.4 SUBMITTAL OF CLOSEOUT DOCUMENTS
- 3.4.1 Organize documents into an orderly sequence based on the table of contents of Project Manual.
1. Bind submittals, O&M manuals, record information, tests, data, bonds, etc. in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each section and document. Mark tab to identify the product or installation. 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 Project name and name of Contractor.
 4. Electronic File: Scan documents and assemble complete package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- 3.5 FINAL CLEANING
- 3.5.1 General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- 3.5.2 Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated 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. Remove petrochemical spills, stains and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
 - g. Sweep concrete floors broom clean in unoccupied spaces.
 - h. Replace any equipment, bleachers, tables, arena and stalls, fencing and gates, etc. disturbed during construction.
 - i. Leave Project clean and ready for use.
- 3.6 REPAIR OF THE WORK
- 3.6.1 Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- 3.6.2 Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Touchup and otherwise repair and restore marred metal finishes and surfaces. Replace material if finishes and surfaces cannot be repaired or restored.

*** END OF SECTION ***

SAMPLE "CONTRACTOR'S GUARANTEE"
(ON CONTRACTOR'S LETTERHEAD)

DATE

OWNER NAME
OWNER ADDRESS

NAME OF PROJECT

We hereby guarantee all Work performed under the Contract for the above captioned Project to be free from all defective materials and workmanship for a period of one (1) year from (insert substantial completion date), or such longer period of time as may be called for in the Contract Documents for such portions of the Work.

CONTRACTOR NAME
CONTRACTOR SIGNATURE

SECTION 03300

STRUCTURAL CONCRETE AND REINFORCING

1.0 GENERAL

1.1 The Work in this Section shall include furnishing all materials, equipment, and labor necessary for construction of cast-in-place concrete.

1.2 RELATED SECTIONS

Division 01 General Requirements

1.3 MEASUREMENT AND PAYMENT

Payment for Work in this Section shall be included in the unit price/lump sum price as outlined in the Bid. Bid price shall include all cost of labor, materials, and incidentals complete.

1.4 REFERENCES

The publications listed below form part of this specification. Each publication shall be the latest revision and addendum in effect on the date this specification is issued for construction unless noted otherwise. Except as modified by the requirements specified herein or the details of the Drawings, Work included in this specification shall conform to the applicable provisions of these publications.

ACI 211.1-91	Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 211.2-91	Standard Practice for Selecting Proportions for Structural Lightweight Concrete
ACI 301-89	Specification for Structural Concrete for Buildings
ACI 302.1R-89	Guide for Concrete Floor and Slab Construction
ACI 304R-89	Guide for Measuring, Mixing, Transporting, and Placing Concrete
ACI 304.2R-91	Placing Concrete by Pumping Methods
ACI 305R-91	Hot Weather Concreting
ACI 306R-88	Cold Weather Concreting
ACI 308-92	Standard Practice for Curing Concrete
ACI 315-92	Details and Detailing of Concrete Reinforcement
ACI 318-89/ACI 318R-89	Building Code Requirements for Reinforced Concrete
ACI 347R-94	Guide to Formwork for Concrete
ACI 504R-90	Guide to Sealing Joints in Concrete Structures
ACI SP-15-89	Specifications for Structural Concrete for Buildings ACI 301-89 with Selected ACI and ASTM References

AISC Code of Standard Practice, Adopted 01Sep86

ASTM A82-94	Standard Specification for Steel Wire, Plain, for Concrete Reinforcement
ASTM A184/A184M-90	Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A185-94	Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM A497	Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement
ASTM A615/A615M	Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A767/A767M-90	Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
ASTM A775/A775	Standard Specification for Epoxy-Coated Reinforcing Steel Bars
ASTM C33-93	Standard Specification for Concrete Aggregates

ASTM C40-92	Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
ASTM C88-90	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C94-94	Standard Specification for Ready-Mixed Concrete
ASTM C109/C109M-95	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)
ASTM C117-95	Standard Test Method for Materials Finer Than 75-Micrometer (Number 200) Sieve in Mineral Aggregates by Washing
ASTM C123-94	Standard Test Method for Lightweight Pieces in Aggregate
ASTM C127	Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C128-93	Standard Test Method for Specific Gravity and Absorption of Fine Aggregate
ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Standard Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C138-92	Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete
ASTM C142-78	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
ASTM C150-95	Standard Specification for Portland Cement
ASTM C171-92	Standard Specification for Sheet Materials for Curing Concrete
ASTM C227-90	Standard Test Method for Potential Alkali Reactivity of Cement - Aggregate Combinations (Mortar-Bar Method)
ASTM C260-94	Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C289-94	Standard Test Method for Potential Reactivity of Aggregates (Chemical Method)
ASTM C295-90	Standard Guide for Petrographic Examination of Aggregates for Concrete
ASTM C309-94	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C330-89	Standard Specification for Lightweight Aggregates for Structural Concrete
ASTM C494-92	Standard Specification for Chemical Admixtures for Concrete
ASTM C595/C595M-95	Standard Specification for Blended Hydraulic Cements
ASTM C618	Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
ASTM C1017-92	Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1567	Standard Test Method for Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)
ASTM D512-89	Standard Test Methods for Chloride Ion in Water
ASTM D994-94	Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
ASTM D1056-91	Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber
ASTM D1751-83	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
ASTM E329	Standard Practice for Use in the Evaluation of Testing and Inspection Agencies as Used in Construction
Federal Specification TT-C800A	Curing Compound, Concrete, for New and Existing Structures
NRMCA Checklist for Ready Mixed Concrete Production Facilities, Fifth Edition, March 1992	

1.5 SUBMITTALS

The following shall be submitted in accordance with “Section 01330 – Submittals”, in sufficient detail to show full compliance with the specification:

SD-01 Pre-Construction: Prior to the placing the reinforcing steel and production or placement of concrete, the Contractor shall submit the following:

1. Bar lists for fabrication of reinforcing steel.
2. Field placing drawings.
3. Certified mill test reports for each bar size for each heat of reinforcing steel delivered.
4. A complete description of proposed curing methods.
5. A copy of Manufacturer's specifications with application and installation instructions for proprietary materials and items including bonding agents, form release agents, water stops, joint systems, chemical floor hardeners, dry shake finish materials, liquid curing compounds, and prepackaged repair materials. Also, include a statement showing product selections comply with VOC (Volatile Organic Compounds) and environmental regulations of the locality.
6. Mix designs shall be proportioned in accordance with Chapter 3 of ACI 301. Submit mix designs for each combination of ingredients on each class of concrete for review.
7. Material suppliers, sources, properties, and certifications.
8. Trial batch qualification test results, including standard deviation analysis.
9. Ingredients test results or certifications.
10. Compressive strength results.
11. Material suppliers, sources, properties, and certifications.
12. A copy of the current National Ready Mixed Concrete Association Certificate of Conformance for Concrete Production Facilities for Supplier's plants, if concrete is provided by a ready mixed concrete supplier.

SD-02 Quality Control:

- a. Design Data: A delivery ticket for each batch, conforming to Section 16 of ASTM C94 shall be given to the Engineer's representative at the point of delivery.
- b. Test Reports: The laboratory shall submit compression test results to the Engineer on a weekly basis. Breaks of 500 psi below the specified design strength at 28 days shall be submitted on the same day. Reports shall contain the project identification name and number, date of concrete placement, name of contractor, name of concrete supplier and truck number, name of concrete testing service, concrete type and class, location of concrete in structure, design compressive strength at 28 days, compressive break strength, and type of break.

1.6 QUALITY ASSURANCE

1.6.1 Pre-Installation Conference

- 1.6.1.1 Concrete Supplier, Engineer, Concrete Contractor, Admixture Supplier, and Testing Laboratory shall meet before submittal of mix design to review specifications, discuss detailed requirements for preparing mix designs, and to establish proper construction procedures.

1.7 DELIVERY, STORAGE AND HANDLING

1.7.1 Delivery

- 1.7.1.1 Deliver ready mixed concrete in truck mixer, meeting the requirements of ASTM C94.
- 1.7.1.2 Water reducing and air entraining admixtures are to be added at the batch plant, while accelerators and retarders may be added at the batch plant or jobsite. Refer to ACI 304, Section 4.5, for requirements for charging of ingredients into the mixer.
- 1.7.1.3 Add high range water reducing admixtures to the concrete at the project site, if specified.
- 1.7.1.4 Reinforcing steel shall be prepared for shipment in such a manner that quality and cleanliness shall be maintained during shipment. Materials shall be adequately protected against damage during shipment.

1.7.1.5 Shipments shall be by structure to the maximum extent possible.

1.7.2 Storage and Protection

1.7.2.1 Store reinforcement above ground and protect from dirt, oil, and grease.

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 Any product not listed under the following Materials section may be submitted to the engineer for review and approval. A product that is not listed is not to be used without written approval of the engineer.

2.1.2 Products shall meet applicable local VOC (Volatile Organic Compounds) regulations.

2.1.3 Concrete Materials

2.1.3.1 Cement: ASTM C150, Type I, or as shown and indicated on drawings; use only 1 brand for all cement.

2.1.3.2 Fly ash: ASTM C618, Class F.

2.1.3.3 Fine and coarse aggregates: ASTM C33 for normal weight concrete; ASTM C330 for lightweight concrete.

2.1.3.4 Water: Mixing water for concrete shall meet the requirements of ASTM C94.

2.1.4 Admixtures

2.1.4.1 Air entrainment: ASTM C260, liquid air-entraining admixture, equivalent to Micro Air by the Masterbuilders Co., or Air Mix by the Euclid Chemical Co., or approved equal.

2.1.4.2 Water reducing: ASTM C494, Type A, Equivalent to Pozzalith 200N by the Masterbuilders Co., or Eucon WR-75 by the Euclid Chemical Co., or approved equal.

2.1.4.3 Water reducing, retarding: ASTM C494, Type D, equivalent to Pozzalith 122R by the Masterbuilders Co., or Retarder 75 by the Euclid Chemical Co., or approved equal.

2.1.4.4 High range water reducer: ASTM C494, Type F or G, (superplasticizer) equivalent to Rheobuild 100 by the Masterbuilders Co., or Eucon 37 by the Euclid Chemical Co., or approved equal. Note: Superplasticizer shall not be used without the written consent of the Engineer.

2.1.4.5 Noncorrosive, nonchloride accelerator, if so specified: The admixture shall conform to ASTM C494, Type C or E, and not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long term noncorrosive test data of at least a year's duration, from an independent testing laboratory, using an acceptable accelerated corrosion test method such as that using electrical potential measures, equivalent to Pozzutec 20 by Masterbuilders, or Accelguard 80 by the Euclid Chemical Co., or approved equal.

2.1.4.6 Admixtures containing calcium chloride, thiocyanates, or any admixture shall not contribute more than 5 ppm (0.005 percent) by weight, of chloride ions to the total concrete constituents.

2.1.4.7 Admixtures from only 1 supplier are to be used.

2.1.5 Concrete Accessories

2.1.5.1 Bonding compounds: Nonrewettable; the compound shall be a polyvinyl acetate type such as Euco Weld by the Euclid Chemical Company. Obtain Engineer's approval prior to use.

2.1.5.2 Epoxy adhesive: The compound shall be a 2-component, 100 percent solids, 100 percent reactive compound suitable for use on dry or damp surfaces, Euco Epoxy Number 452MV or Number 620 by the Euclid Chemical Company or Sikadure Hi-Mod by the Sika Chemical Company.

- 2.1.5.3 Repair topping (thicknesses of 1/16" to 1/2"): Latex and microsilica modified cementitious mortar designed for use as a floor or deck topping. Thin top supreme by the Euclid Chemical Company, or approved equal.
- Repair topping (thicknesses of 1/2" to 2"): Latex and microsilica modified cementitious mortar designed for use as a floor or deck topping. Concrete Top Supreme by the Euclid Chemical Company, or approved equal.
- 2.1.5.4 Vapor barrier: 6 mil thick clear polyethylene film or fabric reinforced plastic film, type recommended for below grade applications.
- 2.1.5.5 Synthetic fibers: Monofilament or fibrillated polypropylene fibers for secondary reinforcing of concrete members. Product shall be Fiberstrand by the Euclid Chemical Company or Fibermesh, by Fibermesh, Inc. Product shall have a UL rating.
- 2.1.5.6 Patching mortar shall be a free-flowing polymer-modified cementitious coating equivalent to Euco Thin Coat by the Euclid Chemical Company.
- 2.1.6 Curing Compounds and Accessories
- 2.1.6.1 Liquid membrane curing compounds conforming to ASTM C309, Type I, ID, Class A and B shall be water clear, styrene acrylate type, minimum solids content 30 percent; maximum moisture loss as determined by independent testing laboratory tests shall not exceed 0.025 grams per square centimeter when applied at a coverage rate of 300 square feet per gallon. The curing and sealing compound shall be certified to comply with this specification and Federal Specification TT-C800A, Type I. Application rate shall not exceed that as stated by the manufacturer which shall meet the above moisture retention requirements. Products shall be equal to Super Diamond Clear VOX or Super Aqua-Cure VOX by the Euclid Chemical Co., Master Kure by the Masterbuilders Co., Dress and Seal 30 or Dress and Seal 30 WB by L & M Construction Chemicals, Inc., or Engineer approved equal. These products also seal and dustproof.
- 2.1.6.2 Liquid chemical curing compounds conforming to ASTM C309, Type I, ID, Class A and B, shall be Master Kure or Master Kure W by Masterbuilders, Inc., Kurez DR by the Euclid Chemical Co., L & M Cure by L & M Construction Chemicals, Inc., or Engineer approved equal and have a minimum solids content of 17 percent.
- 2.1.6.3 In states or areas that require VOC (Volatile Organic Compounds) compliance for curing compounds, the contractor shall select a product and submit for the engineer's approval; especially in enclosed areas of existing operating plants and in the state of California.
- 2.1.6.4 Polyethylene film: ASTM C171, 4 mil thick, clear, white opaque color, or black.
- 2.1.6.5 Absorptive mats: ASTM C171, cotton fabric or burlap-polyethylene, minimum 8 ounce per square yard, bonded to prevent separation during handling and placing.
- 2.1.7 Products for Joints in Concrete
- 2.1.7.1 Joint Primer
- A 2-component penetrating liquid resinous primer, for use with urethane and epoxy sealants such as U-Seal Joint Sealant 3203 Primer by Burke.
- 2.1.7.2 Backup Material
- ASTM D1056, round closed cell foam rod; oversized 30 to 50 percent larger than joint width.
- 2.1.7.3 Waterstop
- Waterstops shall be dumbbell or centerbulb type and shall be made from extruded PVC (polyvinyl chloride) with a minimum width of 6 inches, unless noted otherwise.
- 2.1.7.4 Joint Filler

2.1.7.4.1 ASTM D994, bituminous impregnated fiberboard, 1/2 of an inch and 1 inch thick.

2.1.7.4.2 ASTM D1751; asphalt impregnated cork, with asphalt saturated glass-fiber felt liners; 1/2 of an inch thick.

2.1.7.5 Joint Sealant

2.1.7.5.1 Joint sealants shall conform to the provisions of ACI 504R.

2.1.7.5.2 Expansion and isolation joints: Self-Leveling, 2-component polyurethane sealant such as U-Seal Joint Sealant 3202 Hand-Mix, Non-Sag by Burke.

2.1.7.5.3 Control and construction joints: Corrosion resistant, 2-component resin hardener for joints cut with Soff-Cut saws such as Edge Pro 50 by Metzger McGuire Co., or Euco 700 by the Euclid Chemical Company.

2.1.8 Reinforcing Steel

2.1.8.1 Fabrication

2.1.8.1.1 Reinforcing bars: ASTM A615, deformed billet-steel bars, plain finish.

2.1.8.1.2 Reinforcing bar mat: ASTM A184, deformed billet-steel bars, plain finish.

2.1.8.1.3 Spiral reinforcing: ASTM A82, cold-drawn plain steel wire, plain finish; for spiral reinforcing in columns, cast-in-place piles, drilled piers, and caissons.

2.1.8.1.4 Welded wire fabric: ASTM A185, cold-drawn plain steel; ASTM A497, cold-worked deformed steel; in flat sheets, plain finish.

2.1.8.1.5 Coatings: ASTM A767 for galvanized coating or ASTM A775 for epoxy coating.

2.1.8.1.6 Material shall be new and in accordance with the ASTM specification or other recognized standards specified. Materials not manufactured in the United States shall be submitted for approval. The owner reserves the right to reject the use of such materials.

2.1.8.1.7 Bar bends and fabrication tolerances shall be in accordance with ACI 315.

2.1.8.1.8 Reinforcing steel shall be bent cold. Rebending of hooks shall not be permitted. Bars may be straightened provided the bend is more than or equal to 2 times the recommended minimum diameter of bends.

2.1.8.1.9 Bar supports shall be according to Chapter 5 of ACI 301.

2.1.8.1.10 Tie wire shall be black annealed wire, 16 gage minimum.

2.1.8.2 Placing Drawings and Bending Schedules

2.1.8.2.1 Placing drawings and bending schedules showing the number, grade, size, length, mark, location, and bending diagrams for reinforcing steel shall be prepared in accordance with ACI 315.

2.1.8.2.2 Lap splices shall be as indicated on the design drawings.

2.1.8.2.3 Each structure or foundation shall have a different identity number. Drawings shall indicate the related PO number and drawing number.

2.1.8.3 Identification and Tagging

2.1.8.3.1 Tag reinforcing in accordance with this specification; use embossed metal tags.

2.1.8.3.2 Tag each bundle of bars, straight or bent, showing drawing number, structure, mark number, bar quantity, and size.

2.1.8.3.3 Tag stock length straight bars showing number of bars, size, and length.

2.1.9 Products for Concrete Formwork

2.1.9.1 Design and installation of formwork, tolerances, preparation of form surfaces, removal of forms, and reshoring is to be in strict accordance with Chapter 4, ACI 301.

2.2 FABRICATION

2.2.1 Concrete Strength

2.2.1.1 Unless shown otherwise on drawings, minimum 28-day compressive strength $f'(c)$ shall be as follows:

2.2.1.1.1 Foundations: $f'(c) = 4,000$ psi

2.2.1.1.2 Slab-on-grade $f'(c) = 4,000$ psi

2.2.1.1.3 Structures; columns, beams, slabs: $f'(c) = 4,000$ psi

2.2.1.1.4 Underground duct envelopes: $f'(c) = 2,000$ psi

2.2.1.1.5 Fireproofing: $f'(c) = 3,000$ psi

2.2.1.2 If high early strength concrete is specified, compressive strength shall be 7-day strength.

2.2.2 Slump

2.2.2.1 Footings, piers, and walls: 2 inches to 4 inches.

2.2.2.2 Beams and columns: 1 inch to 4 inches.

2.2.2.3 Slabs: 2 inches to 4 inches.

2.2.2.4 Fireproofing and underground duct envelope: 4 inches to 6 inches.

2.2.2.5 Pours over 2.5 feet thick: 1 inch to 2- 1/2 inches.

2.2.2.6 Concrete containing high range water reducer:

2.2.2.6.1 When high range water reducer is added to maintain slump with lower water/cement ratio, slump shall be as specified in Section 2.3B.1 through 2.3B.5, of this specification, after addition of the reducer.

2.2.2.6.2 When high range water reducer is added to increase slump without changing water/cement ratio, slump before addition of reducer shall be as specified in Section 2.3B.1 through 2.3B.5, of this specification, and shall not exceed 8 inches after addition of reducer.

2.2.3 Water-Cement Ratio

2.2.3.1 Maximum 0.40 for water retaining (hydraulic) structures, 0.45 for other structures.

2.2.4 Formwork

2.2.4.1 Design and construction shall comply with Chapter 4 of ACI 301 and the building code of the local jurisdiction.

2.3 MIXES

2.3.1 Proportioning

2.3.1.1 Proportion normal weight concrete mixes in accordance with Chapter 3 of ACI 301, mass concrete mixes in accordance with Appendix 5 of ACI 211.1, and lightweight concrete mixes in accordance with ACI 211.2 on

the basis of either previous field experience or trial mixes; do not proportion concrete mixes based on empirical data. Refer to Appendix A of ACI 301 for flow chart on proportioning normal weight concrete mixes. Mixing and transportation of concrete shall be in accordance with Chapter 4 of ACI 304R-89.

- 2.3.1.2 Include proposed chemical admixtures in mix design in same proportions and batching sequence as shall be used in production concrete.
- 2.3.1.3 The proposed mix designs shall be accompanied by complete standard deviation analysis of trial mix data.
- 2.3.1.4 Determine standard deviation and required average compressive strength in accordance with the requirements of ACI 301.
- 2.3.1.5 Concrete shall contain a coarse aggregate with a nominal size of 1.5 inches unless a smaller nominal size is permitted by the design documents. Refer to ACI 301, Section 3.6 for additional requirements.
- 2.3.1.6 Give particular attention to aggregate gradation for pumpable concrete mixes.
- 2.3.2 Concrete shall be air entrained according to Table 3.4.1 of ACI 301. Interior floor slabs preferably shall have no air entrainment, but no more than 3 percent.
- 2.3.3 Fly ash may be used as a cementitious material, with the fly ash replacing a maximum of 20 percent of the cement (by weight). The fly ash shall be used in calculating the water-cement ratio and shall come from the same source.

3.0 EXECUTION

3.1 PREPARATION

3.1.1 Anchor Bolts and Embedments

3.1.1.1 Steel, ironwork, pipe sleeves, inserts, wood blocking, nailer strips, isolation joint material, construction joint dowels, and other fixtures as shown, specified, or required to be built into concrete shall be placed accurately and secured against displacement during concreting. Sufficient time between erection of forms and placing concrete shall be given to the various trades to permit proper installation of their work. The installation of anchors, inserts, and sleeves for electrical, mechanical, plumbing, heating, and ventilation work shall be subject to the inspection and approval of the supervisor of the particular trade or trades involved before concrete is placed.

3.1.1.2 The installation of and tolerances for anchor bolts and embedded items shall comply with Paragraph 7.5 of the AISC Code of Standard Practice. Anchor bolts shall be located within 1/8 of an inch of design position.

3.1.1.3 Locate plate inserts within plus or minus 1/4 of an inch horizontally or vertically.

3.1.1.4 Protect bolt threads against damage and concrete; cap or plug sleeves to keep out water, concrete, and debris.

3.1.1.5 Tack welding of anchor bolts, reinforcing steel, and embedments is not permitted unless noted on drawings.

3.1.2 Placing Concrete

3.1.2.1 Preparation before placement and conveying of concrete shall be in accordance with Chapter 8, Section 8.1 and 8.2 respectively of ACI 301.

3.2 INSTALLATION

3.2.1 Concrete Production

3.2.1.1 Production of concrete shall comply with Chapter 7 of ACI 301. Water may be added to the mix at the point of delivery in accordance with Section 11.7 of ASTM C94 when permitted by the owner's testing agent but in no case shall the total amount of water added at the jobsite batch plant exceed the quantity specified for the design mix.

3.2.2 Placing

3.2.2.1 Placement of concrete shall be in accordance with Chapter 8 of ACI 301. The temperature of plastic concrete, as placed, shall not exceed 90 degrees F. During cold weather, as placed, temperature shall not be less than 50 degrees F. Hot and cold weather concreting shall be in accordance with ACI 305 and ACI 306.

3.2.2.2 Color top surface of underground duct envelopes; sprinkle colored iron oxide powder over

3.2.2.2.1 Red for underground electrical ducts.

3.2.2.2.2 Yellow for underground instrument air line ducts.

3.2.2.3 Ensure that discharge of ready mixed concrete is completed within 1.5 hours after batching. The 1.5 hours may be extended if the concrete is of such slump after 1.5 hours (or 300 revolutions) that it can be satisfactorily placed and consolidated without the addition of water.

3.2.2.4 Maintain records of concrete placement; record date, location, quantity, air temperature, field test results, and test samples taken; maintain concrete delivery tickets with record for ready mixed concrete.

3.2.2.5 Redosage: Redosage with the specified high range water reducing admixture (superplasticizer) may be done with the prior approval of the engineer regarding dosage and time periods.

3.2.2.6 Obtain replacement inspection and authorization from the construction manager before placing concrete.

3.2.2.7 Concrete conveying by pumping shall meet the requirements of ACI 304R, Chapter 9. Concrete conveying by belt conveyor shall meet requirements of ACI 304R, Chapter 10.

3.2.2.8 After concrete placement and form removal, clean exposed reinforcing steel and embedded items of concrete splatter, dirt, and other foreign matter.

3.2.2.9 Concrete that has achieved initial set or has been contaminated by foreign matter shall not be deposited in the structure. Retempered concrete shall not be used.

3.2.3 Slabs on Grade

3.2.3.1 Construct slabs in accordance with Chapter 11 of ACI 301.

3.2.3.2 Place concrete in alternating strips.

3.2.3.3 When separate floor toppings are called for, place the floor toppings to required lines and grade after the concrete has cured. Screed toppings level or sloped on the drawings.

3.2.3.4 Floor slab tolerance shall conform to Chapter 7, Section 7.15 of ACI 302.1R (unless otherwise noted on the design drawings).

3.2.3.4.1 When ACI 302.1R is used, the Composite F-numbers for flatness and levelness shall be no less than the following for troweled surfaces:

- F(f) - 20
- F(l) - 15 and for elevated slabs

3.2.3.4.2 Local F-numbers shall be no less than the following:

- F(f) - 15
- F(l) - 10

3.2.3.5 If a vapor barrier is called for on the drawings, and if sharp backfill may puncture the barrier, place a sand layer 3 inches thick as a cushion. Lap vapor barrier 6 inches at joints and seal with duct tape. Carefully fit vapor barrier around service openings.

3.2.4 Slab Finishes

3.2.4.1 Concrete slab surfaces shall be finished in accordance with ACI 302.1R.

3.2.4.2 Finish interior concrete floor slabs in accordance with ACI 302.1R for Class 5 (industrial) floors unless otherwise shown on the drawings.

3.2.4.3 Provide a "floated finish" at equipment bases and exterior slabs according to ACI 301, Section 11.7.2. Provide a "broom finish" to equipment bases, exterior slabs, stairs, steps, ramps, and walks.

3.2.4.4 If no finish is specified, refer to ACI 301, Section 11.8.

3.2.5 Finishing Formed Surfaces

3.2.5.1 Formed concrete surfaces shall be finished in accordance with Chapter 10 of ACI 301, unless otherwise noted on the design drawings.

3.2.6 Formwork

3.2.6.1 The design, installation, and removal of formwork shall be in accordance with ACI 347 except as modified herein. Wall and soil supported member forms may be removed after 48 hours provided the concrete is sufficiently hard not to be damaged by form removal, and provided curing operations start immediately. Self-supporting member forms may be removed after 7 days provided the concrete strength is 80 percent of the 28-day strength. No superimposed load shall be applied before the 28-day strength has been verified by field cured cylinders. Formwork tolerances shall meet ACI 301 Table 4.3.1.

3.2.6.2 Unless otherwise shown on the concrete drawings, exposed edges shall have a 1-inch chamfer. Unexposed corners may be either square or chamfered.

3.2.6.3 Obtain approval before framing openings in structural members if openings are not indicated on the drawings.

3.2.6.4 Do not apply form release agent wherever concrete surfaces shall receive special finishes or wherever applied coverings are affected by agent; soak inside surfaces of untreated forms with clean water; keep surfaces coated before placing concrete.

3.2.6.5 Coordinate work of other specifications in forming and placing openings, slots, reglets, recesses, chases, sleeves, bolts, anchors, and other inserts.

3.2.7 Reinforcement

3.2.7.1 The grade, type, and details of reinforcing steel shall be in accordance with the design drawings. Placement of reinforcement shall be in accordance with Section 5.7 of ACI 301 unless otherwise approved by the engineer.

3.2.7.2 Place, support, and fasten reinforcing before placing concrete; do not insert dowels into fresh concrete; do not float welded wire fabric down into fresh concrete. Support slab reinforcement at the required depth and secure prior to placing concrete; do not pull welded wire fabric up into fresh concrete as it is placed.

3.2.7.3 Secure at least 25 percent of bar intersections (including wall dowels) with wire in 2-way mats.

3.2.7.4 Splice reinforcing bars only as shown on the design drawings. Necessary splices not shown on the drawings shall be lapped sufficiently, as approved by the engineer, to develop the strength of the bars by bond for bars through size Number 11. Mechanical splices shall be made only as shown and noted on the drawings. Welded splices are not allowed.

3.2.7.5 Minimum concrete cover shall be according to ACI 301, Section 5.7. Areas subject to chemical exposure, as noted on the design drawings, shall have a minimum cover of 2 inches, unless otherwise noted.

3.2.8 Joints and Embedded Items

- 3.2.8.1 Joints and embedments shall be in accordance with Chapter 6 of ACI 301 unless otherwise approved by the engineer.
- 3.2.8.2 Construction joints shall be located as shown on the concrete drawings. Any variation from location shown shall be approved by the engineer. Should the concrete operation require the placement of an intermediate construction joint, the concrete shall be struck off square with the structure, water stops added if the normal joint has a waterstop, the location completely recorded and reported to the engineer in writing. Adjacent pour shall not be made until a disposition has been received from the engineer.
- 3.2.8.3 Construction, isolation, and control joints in slabs on grade are to be built in accordance with and located according to the design drawings. Control joints in slab toppings are to be located directly above and in line with the control joints in the underlying concrete slab. Saw cut joints are to begin as soon as the concrete is hard enough to prevent raveling of the surface and dislodging of the aggregate, but no later than 12 hours after concrete placement. Prime and seal joints according to Sealant Manufacturer's instructions. Control joints are to be cut using a Soff-Cut Saw and in strict accordance with the saw manufacturer's written recommendations. Determine the sawing sequence based upon slab pour time and size.
- 3.2.8.4 The surface of construction joints shall be thoroughly cleaned and defective or contaminated concrete, surface film, and laitance removed. Prewet the remaining concrete followed by a brush application of a neat cement paste. Obtain Engineer's approval before using bonding agents. Coating of vertical construction joints is not required.
- 3.2.8.5 Locate construction joints in girders, beams, and framed slabs according to the design drawings. Obtain approval from the engineer before placing any construction joints in locations other than that shown on the design drawings.
- 3.2.8.6 Locate construction joints in walls no more than 100 linear feet apart. Install weakened plane control joints at 25-foot maximum spacing between construction joints.
- 3.2.8.7 Provide and install waterstops in joints as detailed on drawings. Join waterstop sections according to the manufacturer's recommendations. Anchor securely to prevent movement during concrete placement. Provide at all joints subject to either groundwater or process fluids.
- 3.2.8.8 Continue reinforcing through construction joints.
- 3.2.8.9 Isolation joints in walls are to be provided as detailed on the drawings. Interrupt reinforcing at isolation joints; provide and install dowels as detailed on the drawings. Install isolation joints as located on the drawings and where paving adjoins vertical surfaces such as walls, columns, catch basins, manholes, and equipment foundations. Gap width shall be 3/4 of an inch unless otherwise detailed.
- 3.2.8.10 Control or construction joints not specified on the design drawings shall be located at the column centerlines and at intermediate intervals so that each panel does not exceed 600 square feet in area. Concrete shall be placed in alternate paving lanes utilizing construction and control joints as specified.
- 3.2.9 Repair of Surface Defects
- 3.2.9.1 Unless otherwise specified or permitted by the Engineer, tie holes, honeycombs, and other concrete surface defects shall be repaired in accordance with Chapter 9 of ACI 301 and alternate methods in 9.2.2 ACI 301, as soon as practicable after form removal at such times and in such manner as shall not delay, interfere with, or impair the proper curing of the fresh concrete. The engineer shall be notified before proceeding with repair if the defect is greater than 5 inches deep and larger than 200 square inches in surface area, or if the depth is over 1/3 the thickness of the member and greater than 6 inches in any other direction.
- 3.2.9.2 Prepackaged grouts and patching compounds may be used after Engineering approval is obtained. As an alternate, a patching mortar similar to the concrete mix minus the coarse aggregate can be used. Do not use more than 1 part cement to 2-1/2 parts sand by damp, loose volume. Match the color of the surrounding area.
- 3.2.9.3 Remediation of Out-Of-Tolerance Slabs
- 3.2.9.3.1 Grind down high points.

3.2.9.3.2 Raise low points by using the specified underlayment compound or repair topping if the areas are exposed.

3.2.9.3.3 Critical slab areas that must be replaced if out-of-tolerance are identified on drawings.

3.2.9.3.3.1 Demolish and replace out-of-tolerance areas that are identified on drawings.

3.2.9.3.3.2 Submit demolition and replacement plan to the engineer for review and concurrence before demolition.

3.2.9.3.3.3 Replacement slab shall meet tolerance requirements as shown on drawings for critical slab areas.

3.2.10 Curing and Protection

3.2.10.1 Freshly deposited concrete shall be protected from premature drying and excessively hot or cold temperatures and shall be maintained with minimal moisture loss at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete. Curing shall conform to the requirements in Chapter 12, ACI 301.

3.2.10.2 Follow the manufacturer's recommendations for curing and sealing when hardeners, metallic, or mineral aggregate toppings are specified on the design drawings.

3.2.10.3 Concrete Surfaces in Contact with Forms

3.2.10.3.1 The time during which concrete surfaces are in contact with wood or metal forms may be considered as curing time. Wood forms shall be maintained in a moist condition until removal. After form removal, the concrete shall be cured until the end of the curing period by one of the methods of concrete surfaces not in contact with forms. Moist wood forms in contact with concrete shall not be considered as curing for hydraulic structures. Curing time shall commence as soon as the wall forms have been loosened and sprinkling has begun. Wall forms shall be loosened between 24 and 48 hours after concrete placement and sprinkling begins. Wood forms shall be kept moist until the forms are loosened and the curing procedure begins.

3.2.10.4 Sealing and Dustproofing

3.2.10.4.1 Exposed concrete floor surfaces shall be sealed and dustproofed. Where the concrete is cured by using a liquid membrane curing compound, this sealing and dustproofing can be a part of the curing process by applying a second coat of the curing compound, provided a suitable compound is used. Where some other curing method is used, the concrete surface shall be coated with a liquid sealing and dustproofing compound. Apply compounds in accordance with the manufacturer's instructions.

3.2.10.4.2 Liquid membrane curing compounds that also seal and dustproof may be used on exposed concrete floors. Do not use membrane forming compounds on surfaces to receive bonded treatments, tiles, adhered finishes, paint, epoxy toppings, tiles, and additional concrete.

3.2.10.5 Concrete Surfaces Not in Contact with Forms

3.2.10.5.1 Concrete surfaces not in contact with forms can utilize any of the methods indicated in ACI 301, Section 12.2.1 for preservation of moisture, except do not use ponding, sprayed water, or wet sand on exposed concrete slabs.

3.3 TESTING

3.3.1 To ensure that ingredient materials meet the specification requirements, the following preconstruction qualification tests shall be performed on the materials proposed for use. The contractor shall be responsible for compiling this documentation and for having these tests performed by a testing laboratory acceptable to the engineer. Tests on cement and admixtures may be performed by the supplier of the particular material.

3.3.1.1 Cement

3.3.1.1.1 Physical and chemical properties from tests referenced in ASTM C150 or C595 as appropriate.

3.3.1.2 Aggregate

3.3.1.2.1 Reactivity: Aggregates shall be tested for deleterious reactivity with alkalis in the cement, which may cause excessive expansion of the concrete. Separate tests of coarse and fine aggregate shall be made in accordance with ASTM C 1260. If the expansion of coarse or fine aggregate test specimens, tested in accordance with ASTM C 1260, does not exceed 0.10 % at 28 days (30 days from casting), the coarse or fine aggregates shall be accepted.

3.3.1.2.2 If the expansion of any aggregate, coarse or fine, at 28 days is greater than 0.10%, tests of combined materials shall be made in accordance with ASTM C 1567 using the aggregates, cementitious materials, and/or specific reactivity reducing chemicals in the proportions proposed for the mixture design. If the expansion of the proposed combined materials test specimens, tested in accordance with ASTM C 1567, does not exceed 0.10 % at 28 days, the proposed combined materials will be accepted. If the expansion of the proposed combined materials test specimens is greater than 0.10% at 28 days, the aggregates will not be accepted unless adjustments to the combined materials mixture can reduce the expansion to less than 0.10 % at 28 days, or new aggregates shall be evaluated and tested.

<u>Required Test</u>	<u>Sand</u>	<u>Stone</u>
Gradation	ASTM C136	ASTM C136
Fineness modulus	ASTM C136	--
Material finer than Number 200 sieve	ASTM C117	ASTM C117
Organic impurities	ASTM C40	--
Lightweight pieces	ASTM C123	ASTM C123
Friable particles	ASTM C142	ASTM C142
Specific gravity & absorption	ASTM C128	ASTM C127
Los Angeles abrasion	--	ASTM C131
Potential reactivity (chemical method)	ASTM C289	ASTM C289
Potential reactivity (mortar-bar method)	ASTM C227	ASTM C227
Soundness	ASTM C88	ASTM C88
Petrographic examination	ASTM C295	ASTM C295

3.3.1.3 Mixing Water and Ice

3.3.1.3.1 Nonpotable water, if used, shall be tested to determine if it produces mortar cubes having 7 and 28-day strengths equal to at least 90 percent of the strength of similar specimens made with distilled water. The strength comparison shall be made on mortars, identical except for the mixing water, prepared and tested in accordance with ASTM C109. The chloride content shall be determined in accordance with ASTM D512.

3.3.1.4 Water Reducing, Retarding, Accelerating and Air Entraining Admixture

3.3.1.4.1 Manufacturer's certification that the admixture complies with ASTM C494 and ASTM C1017, Standard Specification for Chemical Admixtures for use in Producing Flowable Concrete.

3.3.1.5 Pozzolanic Admixtures

3.3.1.5.1 The tests for physical and chemical properties referenced in ASTM C618 shall be performed.

3.3.2 Concrete materials and operations shall be tested and inspected as the work progresses in accordance with Chapter 16 of ACI 301. Failure to detect any defective work or material shall not in any way prevent later rejection when such defect is discovered nor shall it obligate the architect/engineer for final acceptance.

3.3.3 Testing shall include compressive tests of molded concrete cylinders, tests for slump, unit weight, air content (where air entrainment is required), fresh concrete temperature, and unit weight according to ASTM C138.

3.3.4 The rate of sampling shall be in accordance with ACI 301, Section 16.3. Take additional samples when observations on tests indicate nonconformance with the specifications.

3.3.5 Testing of Reinforcing Steel

3.3.5.1 Reinforcing steel shall be tested in accordance with ASTM A615.

3.3.5.2 Reinforcing steel with rust, mill scale, or a combination of both shall be considered satisfactory provided the minimum dimensions, including height of deformations and weight of hard-wire-brushed test specimen, are not less than ASTM A615 requirements. Such test shall be at the engineer's discretion.

3.3.5.3 Reinforcing steel shall be free from mud, oil, or other nonmetallic coatings that adversely affect bonding capacity.

3.4 FIELD QUALITY CONTROL

3.4.1 Testing

3.4.1.1 The construction manager shall establish procedures for inspection, testing, acceptance criteria, and documentation. These procedures shall define the documentation that shall be employed to ensure that the certifications, examinations, tests, and approvals required by the contract specifications are accomplished. Inspection procedure shall provide for documented preplacement inspections. Testing and acceptance of materials and concrete work shall comply with Chapters 16, 17, and 18 of ACI 301 unless otherwise modified herein.

3.4.1.2 The contractor's responsibilities and duties in relation to the owner's testing agent shall be as specified in Section 16.7 of ACI 301.

3.4.1.3 The owner's testing agent shall have duties and authorities as specified in Section 16.6 of ACI 301.

3.4.1.4 Acceptance of concrete shall be based upon results for slump, air content, temperature, and strength taken at the site. Testing frequency shall be as specified in Section 16.3 of ACI 301 unless waived by the engineer.

3.4.1.5 The finished structure shall be evaluated for acceptability in accordance with Chapter 18 of ACI 301. The contractor shall pay costs incurred for additional testing, analyses, and any corrective work required when the structure is found to be deficient in strength or other specified characteristics.

3.4.1.6 During construction, the Independent Testing Agency shall inspect, sample, and test concrete materials and production of concrete as required by the engineer. Failure to detect any defective work or material shall not prevent in any way later rejection when such defect is discovered, nor shall it obligate the engineer for final acceptance. The testing and inspection agency shall meet the requirements of ASTM E329.

*** END OF SECTION ***

SECTION 03600

GROUTING

1.0 GENERAL

1.1 Summary

A. Scope of Specification

This specification prescribes requirements for the furnishing and installation of grouts for use between applied loads (column base plates and foundations).

B. Work Not Included

This specification does not cover grouts for grouting anchor bolts and rebar, masonry, prestressing tendons, concrete repair, waterproofing, or geotechnical use.

C. Related Specifications

The following specifications prescribe items of related Work:

- 03300: Structural Concrete And Reinforcing
- 05120: Structural Steel
- 01000: General Requirements

Coordinate Work prescribed by this specification with Work prescribed by the above listed specifications.

D. Terminology

1. Foundation Plates: Refers to column base plates and equipment bed plates or soleplates that are installed on concrete foundations.
2. Puddling: Refers to agitating grout with a tamper or a wooden or metal rod in order to settle aggregate; it does not mean vibrating.

1.2 References

The publications listed below form part of this specification. Each publication shall be the latest revision and addendum in effect on the date this specification is IFC (Issued For Construction) unless noted otherwise. Except as modified by the requirements specified herein or the details of the drawings, Work included in this specification shall conform to the applicable provisions of these publications.

A. ACI (American Concrete Institute)

1. ACI 304R-89 Guide for Measuring, Mixing, Transporting, and Placing Concrete.

B. ASTM (American Society for Testing and Materials)

1. ASTM C33-93 Standard Specification for Concrete Aggregates.
2. ASTM C109/ Standard Test Method for Compressive Strength of Hydraulic C109M-95 Cement Mortars (Using 2 inch or 50 mm Cube Specimens)
3. ASTM C150-95 Standard Specification for Portland Cement
4. ASTM C191-92 Standard Test Method for Time of Set of Hydraulic Cement by Vicat Needle

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|----|-------------------------|--|
| 5. | ASTM C531-95 | Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical Resistant Mortars, Grouts, and Monolithic Surfacing |
| 6. | ASTM C579-91 | Standard Test Method for Compressive Strength of Chemical Resistant Mortars and Monolithic Surfacing and Polymer Concretes |
| 7. | ASTM C827
Rev. A-95 | Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures |
| 8. | ASTM C1107
Rev. A-91 | Standard Specification for Packaged Dry, Hydraulic Cement Grout (Nonshrink) |

C. CRD (Corps of Engineers)

- | | | |
|----|----------|-----------------------------------|
| 1. | CRD C621 | Specification for Nonshrink Grout |
|----|----------|-----------------------------------|

1.3 System Description

A. Design Requirements

1. Foundation plates for equipment and structures shall be grouted to provide full uniform load transfer between bottom of plate and concrete foundation.
2. Load transfer to foundation must be through grout, not through shims or other leveling devices.
3. Applications by Grout Types (If grout type is not specified on drawings, use nonshrink cement based grout.)
 - a. Nonshrink Cement Based Grout
 - (1) Column baseplates/ 3000psi @ 7days.
 - (2) Equipment with cast bases.
 - (3) Equipment on base frames with cover plates.

B. Performance Requirements

Nonshrink Cement Based Grout

- a. Plastic Volume Change
 - (1) No shrinkage (0.0 percent) and 4.0 percent maximum expansion before initial set as measured in accordance with ASTM C827.
- b. Hardened Volume Change

No shrinkage (0.0 percent) and 0.4 percent maximum expansion in the hardened state as measured in accordance with CRD C-621.
- c. Compressive Strength
 - (1) Manufactured Grouts

Minimum 5,000 psi at 28 days if tested according to ASTM C109.
 - (2) Other Grouts

Minimum 3,000 psi at 7 days when tested according to ASTM C109.

d. Working Time

Consistency greater than 100 percent for a minimum of 45 minutes at 75 degrees F, if tested according to applicable consistency sections of ASTM C827 at 15 minute intervals.

e. Creep Resistance

Equal to or less than 0.0006 of an inch per inch at 70 degrees F, for a minimum of 1 year (extrapolated data not acceptable), if tested in accordance with the Creep Test. Refer to Attachment 02.

f. Free from chemically produced gas, oxidizing catalysts, inorganic accelerators, chloride, and metallic particles.

g. Nonstaining.

1.4 Submittals

A. Copies of test reports, including test data, shall be certified by an independent laboratory, verifying that manufactured grouts meet or exceed performance requirements as tested according to ASTM C1107.

B. Provide manufacturer's installation instructions, detailed Product Datasheets, and Material Safety Datasheets for manufactured grouts.

1.5 Product Delivery And Handling

A. Delivery

1. Deliver manufactured grouts in manufacturer's packaging including installation instructions.

2. Deliver nonshrink cement based grout in sound, dry packages.

3. Deliver grout aggregate in sound, dry packages.

B. Storage and Handling

1. Store manufactured grouts in accordance with the manufacturer's printed instructions.

2. Store nonshrink cement based grout, cement, and cementitious materials in accordance with ACI 304R.

3. Do not store manufactured grouts for more than 6 months, or the period of time recommended by manufacturer.

4. Do not store cement based manufactured grouts at a temperature below 40 degrees F or above 90 degree F.

1.6 Site Conditions

A. Environmental Requirements

1. Nonshrink Cement Based Grout

Maintain temperature of foundation, base plate and grout between 40 degrees F and 90 degrees F, as measured by surface thermometer, during grouting and for a minimum of 24 hours following grouting.

2. No grouting shall be installed at temperatures below 40 degrees F, unless work is protected and artificial heat is applied during and for 3 days after grouting.

2.0 PRODUCTS

2.1 Materials

Nonshrink Cement Based Grout

Premixed, preproportioned, factory packaged product consisting of a mixture of cement, sand, and inert materials.

2.2 Equipment

A. Grout Mixer

Mortar mixer with moving paddles inside a drum; do not use concrete mixer with fins attached to rotating drum.

B. Grout Pump

Positive displacement type such as diaphragm or piston pump; screw pump not acceptable.

2.3 Design Criteria

- A.** Observe the following guidelines for epoxy grout installations in order to minimize creep and edge curling:
- B.** Total equipment weight plus total bolt torque load divided by surface area of grout does not exceed 500 psi.
- C.** Projection of grout bed beyond edge of bearing plate is less than thickness of grout bed.

2.4 Inspection and Tests

Confirm that manufactured grouts meet performance requirements, Section 1.3, when tested according to ASTM C109 and CRD C621.

2.5 Identification and Tagging

Manufactured grouts shall be factory packaged in bags or containers clearly marked to identify components and with printed manufacturer's mixing and installation procedures listed.

3.0 EXECUTION

3.1 Examination

- A.** Verify that concrete surfaces are free from ice, frost, dirt, grease, oil, curing compounds, paints, impregnations, and loose material or foreign matter likely to affect bond or performance of grout.
- B.** Verify that newly placed concrete has cured sufficiently to attain design strength, typically 3 to 7 days, prior to surface preparation.
- C.** Verify that foundation surfaces to be grouted are level within 1/2 of an inch.
- D.** Verify that concrete surfaces to receive cement based grouts are wet.
- E.** Verify that base plates are free from rust, oil, and other deleterious substances; tightly bonded paint is acceptable.
- F.** Verify that concrete surfaces to receive nonshrink epoxy grouts are dry.
- G.** Verify that required foundation plates are set to proper elevations.

- H. Verify that cement based grout materials are not damp and have not air set; discard damp or air set materials.

3.2 Preparation

A. Cement Based Grouts

1. Concrete Surfaces
 - a. Concrete foundations shall be at least 7 days old before surface preparation.
 - b. Roughen surface by chipping, sandblasting, or other mechanical means to assure bond of grout to concrete.
 - c. Remove oil soaked concrete, loose or broken concrete, or concrete with hairline cracks down to solid concrete. Finished surfaces must be firm and rough.
 - d. Wash surface clean; saturate with water for at least 24 hours before placement of grout.
 - e. Just before grouting, remove excess water with clean compressed air, leaving surface damp; remove water from anchor bolt sleeves.
 - f. Place forms as needed.
2. Metal Surfaces in Contact with Grout
 - a. Clean foundation plates to remove dirt, oil, grease, or loose paint; tightly adhered paint is acceptable.
3. Foundation and Leveling Plates
 - a. Set leveling plates to the proper elevation.
 - b. Set, align, and firmly anchor foundation plates before grout is placed.
4. Formwork
 - a. Provide formwork as needed for nonshrink cement based grout, pourable sand-cement grout, and sand-cement drypack grout.
 - b. Design forms for rapid, continuous, and complete filling of space to be grouted. Forms shall be strong, securely anchored, and shored. Caulk or seal to prevent excessive leakage.
 - c. Design forms to be at least 1 inch clear of base plate or equipment base; top of form to be at least 1 inch above bottom of adjacent base plate.
 - d. Install vent holes in areas where air pockets may form during grouting; minimum diameter 1/8 of an inch.
 - e. Coat forms with form oil or heavy wax to prevent grout adherence and absorption.
 - f. Firmly anchor forms in place.
5. Anchor Bolts and Sleeves

Clean anchor bolt blockouts and sleeves to remove deleterious materials.

B. Mixing Equipment

Clean mixing equipment and tools to ensure they are free from oil, dirt, grease, grout residue, or other deleterious substances.

C. Instructions

Carefully read and understand manufacturer's instructions as supplied with grout before starting.

3.3 Installation

A. Precautions

1. Vibrations from nearby operations can be transmitted into foundations being grouted. These vibrations cause bleeding and settlement, affect setting time and strength, or create hidden fracture planes.
2. Observe surface of a shallow pan of water set on foundation being grouted to detect vibration.
3. Shutdown nearby operations if vibrations are detected until grout has taken final set.

B. Cement Based Grouts

1. Mixing

- a. Use a mortar mixer or a wheelbarrow; do not use a concrete mixer.
- b. Mix grout adjacent to area being grouted; have sufficient manpower and equipment to mix and place grout rapidly and continuously.
- c. Mixing equipment must be free from oil, dirt, grease, leftover grout, and other deleterious substances; discard leftover grout from previous batch.
- d. Wash out mixer with clean water; empty out water, leaving mixer wet.
- e. Mix only that quantity of grout that can be placed within the working time of the grout.
- f. Do not add admixtures or ingredients not specified or included with manufactured grout.
- g. Add dry grout components to mixer and dry mix; add premeasured amount of potable water to mixer; mix grout for no less than 3 nor more than 5 minutes; place grout immediately.

2. Placing

- a. Grout may be drypacked, flowed, or pumped into place.
- b. Place grout within the working time of the grout; discard grout that is not placed within working time of grout. Retempering of grout is not allowed.
- c. Place grout quickly and continuously to avoid segregation, bleeding, or premature initial set; do not place grout in layers.
- d. Place grout from 1 side of plate to the other to avoid trapping air.
- e. Place grout from 1 long side of equipment base to the other, in 1 direction only.
- f. If grout must be placed through grout holes, place from 1 hole continuously until grout has passed second hole; continue placing grout from next grout hole in similar fashion.

g. Flowable Grouting

- (1) Use moveable head box having an inclined plane to direct grout beneath equipment base in a manner to minimize trapped air and bubble formation.
- (2) For placing large volumes of grout continuously, use head box with a minimum of 3 cubic foot volume.

- (3) Fill head box to top and plunge grout down to top of base plate; continue until grout rises above bottom of base plate on far side.
- h. Pumping Grout
- (1) Use on large installations and multiple installations; for bases with shear keys, stiffeners, or other obstructions; for grouting over great distances; or if venting air is not possible.
 - (2) Rinse pump, hose, and nozzle with water; wash cleansing plug through line to ensure it is clear; pump grout slurry through before starting.
 - (3) Start grouting at far end of space to be grouted; slowly back out nozzle so that it is always within the grout to prevent air entrapment.
 - (4) Continue placing grout until grout oozes out along entire perimeter and up through every interior vent hole and grout hole.
- i. Drypacking Grout
- (1) Use wooden or metal ram or metal strap to force grout into position.
 - (2) Do not use chain because of air entrapment between links.
- j. Equipment with Elevated Interior Plate
- (1) Grout under entire equipment base to top of exterior plate.
 - (2) Stop grouting for a short time to allow grout to seal periphery of exterior plate.
 - (3) Continue placing grout until grout oozes up through every interior vent hole and grout hole.
3. Finishing
- a. Just before grout has reached final set, cutback to lower edge of plate.
 - b. A 45 degree angle cutback is preferred; a vertical cutback is acceptable.
4. Curing
- a. Keep forms in place for at least 24 hours for flowable grouts and 3 hours for other grouts.
 - b. Keep grout moist for at least 3 days and protect from rapid drying.
 - c. Cure grout according to manufacturer's recommendations on package, or in their latest specification or literature.
- 3.4 Field Quality Control**
- A. Technical Services**
1. Before grouting with manufactured grout, call manufacturer's technical representative to pregrouting conference at the job site.
 2. Review grouting steps and manufacturer's instructions with those who shall actually be doing the grouting.
 3. Have representative remain at worksite as long as required to ensure correct procedures are being used and that manufacturer's warranty is not in jeopardy.

4. Advise Engineer if representative recommends materials or procedures contrary to this specification.

B. Cement Based Grouts

1. Make 4 test cubes in the field for each batch of grout mixed and placed; make test cubes according to applicable provisions of ASTM C109.
2. Cure 2 cubes in the field for 3 days in the same way as the placed grout is cured; after 3 days transport cubes to testing lab for compressive strength testing.
3. Cure remaining 2 cubes in the field for 24 hours in the same way as the placed grout is cured; after 24 hours transport cubes to testing lab and moist cure according to applicable provisions of ASTM C109 until tested.
4. Do compressive strength tests on cubes according to applicable provisions of ASTM C109; test field cured cubes at 3 days; test lab cured cubes at 7 days and at 28 days.

C. Submit written reports on each test as soon as results are available.

3.5 Adjustment and Cleaning

Cement Based Grouts

1. Wash mixing equipment and tools with water before grout residue hardens.
2. Rinse pump and hoses with water to remove grout immediately after grouting is complete.
3. Remove grout splatters from adjacent Work.

3.6 Protection

A. Cold Weather

Keep temperature of grout, plate, and foundation above specified temperature for specified curing time.

B. Hot Weather

Keep grout, plate, and foundation shaded and cool for specified curing time.

4.0 PAYMENT

Payment for work in this section shall be included in the lump sum or unit price bid to which it is subsidiary.

SECTION 05125
METAL BUILDING COMPONENTS

1.1 GENERAL

- 1.2 The Work in this Section shall include furnishing all materials, equipment, and labor necessary to provide Metal Framing Components (Primary and Secondary), metal trim, gutters, downspouts, and any ancillary material and components to complete the:
- a. Anchor Bolts
 - b. Gutters Downspouts
 - c. Eave and Rake Trim
 - d. Wall Panel Trim

1.3 RELATED SECTIONS

Division 01 General Requirements
Section 03300 Structural Concrete and Reinforcing
Section 07620 Galvanized Metal Flashing and Trim
Section 09906 High-Performance Field Coating

1.4 MEASUREMENT AND PAYMENT

Payment for Work in this Section shall be included in the unit price/lump sum price as outlined in the Bid. Bid price shall include all cost of engineering, labor, materials, and incidentals complete.

1.5 REFERENCES

The publications listed below form part of this specification. Each publication shall be the latest revision and addendum in effect on the date this specification is issued for construction unless noted otherwise. Except as modified by the requirements specified herein or the details of the Drawings, Work included in this specification shall conform to the applicable provisions of these publications.

AISC Specification for Structural Steel Buildings
AISC Serviceability Design Considerations for Low-Rise Buildings
AISC 13 Specifications for Design and Construction of Mill Buildings

ANSI North American Specification for the Design of Cold-Formed Steel Structural Members

ASTM A 36 Standard Specification for Carbon Structural Steel
ASTM A 48 Specification for Gray Iron Castings
ASTM A 123 Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 307 Specification for Carbon Steel Bolts and Studs, 60 000 psi Tensile Strength
ASTM A 325 Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 354 Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
ASTM A 475 Specification for Zinc-Coated Steel Wire Strand
ASTM A 490 Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength
ASTM A 500 Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A 529 Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality
ASTM A 563 Specification for Carbon and Alloy Steel Nuts
ASTM A 572 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

ASTM A 653 / A 653M	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A 755	Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products
ASTM A 792 / A 792M	Standard Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
ASTM A 992	Standard Specification for Structural Steel Shapes
ASTM A 1011	Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
ASTM A 1039	Specification for Steel, Sheet, Hot Rolled, Carbon, Commercial, Structural, and High-Strength Low-Alloy, Produced by Twin-Roll Casting Process
ASTM C 90	Standard Specification for Loadbearing Concrete Masonry Units
ASTM D 2244	Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
ASTM D 4214	Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
ASTM E 96 / E 96M	Standard Test Methods for Water Vapor Transmission of Materials
ASTM E 108	Spread-of Flame Testing: Class 1A Rating
ASTM E 283	Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E 331	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E 1592	Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference
ASTM E 1646	Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference
ASTM E 1680	Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems
ASTM E 2140	Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head
ASTM F 436	Specification for Hardened Steel Washers
ASTM F 1145	Specification for Turnbuckles, Swaged, Welded, Forged
ASTM F 1554	Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
AWS D1.1 / D1.1M	Structural Welding Code – Steel
AWS D1.3 / D1.3M	Structural Welding Code – Sheet Steel

International Accreditation Service (IAS)

Light Gauge Steel Institute (LGSI)

Metal Building Manufacturers' Association (MBMA)

Steel Joist Institute (SJI)

1.6 SUBMITTALS

The following shall be submitted in accordance with "Section 01330 – Submittals", in sufficient detail to show full compliance with the specification.

SD-01 Product Data: Manufacturer's data sheets on each product to be used, including:

- a. Preparation instructions and recommendations.
- b. Storage and handling requirements and recommendations.
- c. Finish Coat: Provide Manufacturer's product data sheet and standard color chart for gutters, downspouts, and ancillary components.
- d. Touch-up paint, when required, compatible with coating system and as recommended by manufacturer.

- e. Contractor to provide physical properties of material to be restored, replaced, extended, etc. to Engineer for approval prior to purchase.

SD-03 Quality Control:

- a. Welder's Certifications: Certification of welder qualifications shall be furnished as specified by the Project Engineer.
- b. Bill of Materials: Bills of material shall be furnished and shall include item weights.
- c. Bill of Laden: Bills of laden shall be furnished upon delivery of components.

1.7 QUALITY ASSURANCE

1.7.1 Manufacturer / Fabricator Qualifications:

- a. All primary products specified in this section will be supplied by a single Manufacturer /Fabricator with a minimum of five (5) years' experience.

1.7.2 Weldments/Welder/Weld Inspection Qualifications:

- a. Welding inspection and welding inspector qualification for structural steel shall be in accordance with AWS D1.1, "Structural Welding Code – Steel", latest edition. Welding inspection and welding inspector qualification for cold-formed steel shall be in accordance with AWS D1.3, "Structural Welding Code – Sheet Steel", latest edition.

- 1.7.3 Erector Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.

1.8 DELIVERY, STORAGE AND HANDLING

1.8.1 Packing and Shipping

- 1.8.1.1 Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer. Each component/bundle shall be individually, clearly marked.

1.8.2 Storage and Protection

- 1.8.2.1 Store and handle materials in accordance with manufacturer's instructions.

- 1.8.2.2 Keep materials in manufacturer's original, unopened containers and packaging until installation.

- 1.8.2.3 Do not store materials directly on ground.

- 1.8.2.4 Store materials on flat, level surface, raised above ground, with adequate support to prevent sagging.

- 1.8.2.5 Store materials to provide proper drainage and to avoid collection of water on materials that may result in oxidation or staining.

- 1.8.2.6 Protect materials and finish during storage, handling, and installation to prevent damage.

- 1.8.2.7 Clean all material that may be soiled, stained, or show signs of oxidation prior to erecting material. Recoat material as necessary.

- 1.8.2.8 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

- 1.8.2.9 Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.9 WARRANTY

1.9.1 Building System Warranty

1.9.1.1 Furnish manufacturer's standard warranty for the metal building components.

1.9.1.2 The manufacturer shall warrant the metal building components against failure due to defective material or workmanship for a period of one (1) year from date of installation complete.

2.0 **PRODUCTS**

2.1 MANUFACTURERS

2.1.1 Acceptable Manufacturer: Phillips Metal Products, Goldin Metals, or approved equal.

2.2 MATERIALS

2.2.1 Primary Framing Steel:

- a. Steel for hot rolled shapes must conform to the requirements of ASTM Specifications A-36, A-572 or A-992, with minimum yield of 36 or 50 ksi, respectively.
- b. Steel for built-up sections must conform to the requirements of ASTM A-1011, A-1018, A-529, A-572 or A-36 as applicable, with minimum yield of 42, 46, 50, or 55 ksi as indicated by the design requirements.
- c. Round Tube must conform to the requirements of ASTM A-500 Grade B with minimum yield strength of 42 ksi.
- d. Square and Rectangular Tube must conform to the requirements of ASTM A-500 Grade B with a minimum yield strength of 46 ksi.
- e. Steel for Cold-Formed Endwall "C" sections must conform to the requirements of ASTM A-1011 or A-1039 Grade 55, or ASTM A-653 Grade 55 with minimum yield strength of 55 ksi.
- f. X-bracing will conform to ASTM A-36 or ASTM A-529 for rod and angle bracing or ASTM A-475 for cable bracing.

2.2.2 Secondary Framing Steel:

- a. Steel used to form purlins, girts and eave struts must meet the requirements of ASTM A-1011 or ASTM A-1039 Grade 55 for primed material or ASTM A-653 Grade 55 for galvanized material with a minimum yield of 55 ksi.
- b. Design Thicknesses – Gauge to be determined by design to meet specified loading conditions.

2.2.3 Flashing and Trim: Match material, finish, and color of adjacent components, unless specified otherwise on Drawings. Provide trim at rakes, including peak and corner assemblies, exterior and interior corners, base of wall panels, and as required to provide a finished appearance. Refer also to Drawings.

2.2.4 For restoration/replacement, Contractor shall be responsible for determining shape, size, length, and thickness/gauge of material. Replacement material shall be of equal value or greater than the material being replaced. Replacement of fasteners and ancillary components required to provide the component specified shall be provided and considered an absorbed cost to providing the bid item.

2.3 PRIMARY FRAMING

2.3.1 Finish: Red-Oxide Primer.

2.3.2 Column Anchor Bolts: Quantity, placement, and diameter of anchor bolts shall be equal to the existing anchor bolts. Engineer will provide lengths on Drawings. Contractor shall determine size in field and submit to Engineer for approval.

2.3.3 Field Bolted Connection: Quantity, placement, and diameter of field bolts shall be equal to the existing field bolts.

2.4 SECONDARY FRAMING

- 2.4.1 Purlins and Girts: Purlins and girts shall be cold-formed "Z" sections with stiffened flanges unless noted otherwise. Flange stiffeners shall be sized to match existing. They shall be pre-punched at the factory to provide for field bolting to the rigid frames. They shall be simple or continuous span. Connections, whether bolted or welded, shall be installed in kind with existing conditions.
- 2.4.2 Purlins: Horizontal structural members which support roof coverings.
- Depth: 8" Z to be field verified by Contractor.
 - Flange: 3" to be field verified by Contractor.
 - Length: 28'-0" Z to be field verified by Contractor. Length to be equal to existing member.
- 2.4.3 Girts: Horizontal structural members that support vertical panels.
- Depth: 8" Z to be field verified by Contractor.
 - Flange: 3" to be field verified by Contractor.
 - Length: 28'-0" Z to be field verified by Contractor. Length to be equal to existing member.
- 2.4.4 Eave Struts: Unequal flange, cold-formed "C" sections or "Z" purlins.
- Depth: 8" C to be field verified by Contractor.
 - Length: 28'-0" C to be field verified by Contractor. Length to be equal to existing member.
- 2.4.5 Finish: All secondary components shall be finished the same as primary framing finish under 2.3 Primary Framing.

2.5 ACCESSORIES

- 2.5.1 Trim:
- Type: Match existing shape, profile, and gauge.
 - Finish/Color: to match existing.
- 2.5.2 Gutter and Downspout System:
- Type: Match existing shape, profile, and gauge.
 - Finish/Color: to match existing.

2.6 FABRICATION

- 2.6.1 General:
- Shop-fabricate all framing members for field bolted assembly. The surfaces of the bolted connections must be smooth and free from burrs or distortions.
 - Field connections must conform to the manufacturer's standard design practices as defined in this section.
 - All framing members must carry an identifying mark.
- 2.6.2 Primary Framing:
- Plates, Stiffeners and Related Members: Field weld base plates splice plates, cap plates, and stiffeners into place on the structural members.
 - Bolt Holes and Related Machining: Shop fabricate base plates, splices and flanges to include bolt connection holes. Bracing holes in webs may be field drilled. Touching or heating existing components is strictly prohibited.
 - Secondary structural connections (purlins and girts) to be ordinary bolted connections, which may include welded clips.
 - Non-Destructive Testing (NDT) - NDT shall be performed and documented as required by the Engineer should field observation reveal unsatisfactory workmanship.

- 2.6.3 Zee Purlins:
- a. Fabricate purlins from cold-formed "Z" sections with stiffened flanges. Size flange stiffeners to comply with the requirements of the latest edition of AISI. Connection bolts will install through the webs, not the flanges.

- 2.6.4 Girts
- a. Girts must be simple or continuous span. Connection bolts will install through the webs, not the flanges.

3.0 EXECUTION

3.1 EXAMINATION

- 3.1.1 Examine substrates, areas, and conditions, with Erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- 3.1.2 Before erection proceeds, survey elevations and locations of material bearing surfaces and locations of anchor rods, bearing plates and other embedment's to receive structural framing, with Erector present, for compliance with requirements and metal building component tolerances.
- 3.1.3 Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- 3.2.1 Clean surfaces thoroughly prior to installation. Oxidation and/or staining between material surfaces and connections after installation shall not be acceptable and surface of the material being rejected shall be repaired at the Contractor's expense.
- 3.2.2 Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads equal in intensity to design loads. Remove temporary supports when permanent structural framing connections and bracing are in place, unless otherwise indicated.
- 3.2.3 Protection
- 3.2.3.1 Protect existing adjacent components and installed products until completion of Project.
- 3.2.3.2 Touch-up, repair or replace damaged products before Substantial Completion.

3.3 INSTALLATION

- 3.3.1 The erection of the building components shall be performed by a qualified erector, using proper tools, equipment and safety practices.
- 3.3.2 Erection practices shall conform to "Common Industry Practices", Section 6, MBMA (LR)-Building Systems Manual.
- 3.3.3 Contractor shall make necessary provisions and take precautions to not overload the structure with construction loads.
- 3.3.4 Exact size and shape of existing versus new secondary member could vary. Contractor shall trim break in flanges as necessary to nest components as approved by Engineer.
- 3.3.5 There shall be no field modifications to primary structural members except as authorized and specified by Drawings.
- 3.3.6 When field cutting of cold-formed material is required, non-abrasive cutting tools such as nibblers or tin-snips shall be used. The cut end and edges shall immediately receive a protective coating to match the finish of the cut material.

- 3.3.7 The field applied protective coating shall be compatible with the cut material coating system.
- 3.3.8 Where drilling or cutting of a component is required, all shavings shall be cleaned from the panel surface immediately. If shavings, screws, washers, clips, etc. are allowed to rust, corrode, or stain the finish surface beyond cleaning, the Contractor shall replace the entire component with a new component at no additional expense to the Owner.
- 3.3.9 Any panel damaged during erection, handling, etc. shall be culled out and replaced with new. Scratches, gouges, or abrasions that expose the metal substrate shall be replaced with new at no additional cost to the Owner.
- 3.3.10 Prior to request for Substantial Completion, the contractor shall:
- a. Clean all building components installed under the Contract of soil and other foreign debris.
 - b. Clean, prepare, and touch up the coating at areas damaged and areas rusting prior to Project completion.
- 3.3.11 After installation of the building and before final acceptance by the Owner, the Contractor shall deliver to the Engineer the written guarantee stating that the installed building components will remain free of defects for a period of one (1) year.

*** END OF SECTION ***

SECTION 07560
FLUID-APPLIED ROOFING

1.0 GENERAL

1.1 SUMMARY

- A. Provide labor, materials, equipment and supervision necessary to provide a seamless, fully adhered fluid-applied roofing system to new or previously coated existing metal roofing as outlined in this specification.
- B. The Manufacturer's Application Instructions for each product used are considered part of this specification and should be strictly followed at all times.
- C. Related Sections:
 - 1. 01000: General Requirements

1.2 SYSTEM DESCRIPTION

- A. Coating System shall be a complete system of materials compatible with the existing coating system to create a seamless durable waterproof and mildew resistance roof coating.
- B. Coating System shall be designated for application on the existing type of deck, type of roof panels and existing finishes.

1.3 SUBMITTALS

- A. Product Data: Submit product literature and installation instructions.
- B. Project Reference List: Submit list of projects where specified product has been installed and contact information for Owner/Architect/Engineer.
- C. Samples: Submit samples of specified fluid-applied roof system. Samples shall be construed as examples of finished color and texture only.
- D. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the system.
- E. Warranty: Submit copy of manufacturer's standard 10-year (minimum) warranty.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Applicators shall be a single source experienced Contractor approved by product manufacturer to install the specified system.
- B. Requirements of Regulatory Agencies: Materials used in the fluid-applied roofing system shall meet Federal, State and local VOC regulations.
- C. Field Quality Control: Upon completion of the installation, an inspection by Manufacturer or its designated third party inspection company will be required in conjunction with the Engineer.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Materials shall be delivered in original tightly-sealed containers or unopened packages, clearly marked with supplier's name, brand name, type of material, file number, and batch numbers.
- B. Storage and Handling: Recommended material storage temperature is 75°F (23.8°C). Handle products to avoid damage to containers. Do not store for long periods in direct sunlight.

1.6 JOB CONDITIONS

- A. Environmental Conditions:
1. Min Ambient: 50°F (10°C)
 2. Max Ambient: 110°F (43.3°C)
 3. Min Surface: 50°F (10°C)
 4. Max Surface: 130°F (54.4°C)
 5. Minimum temperatures must be rising following applications. Contact technical services for more information.
 6. Do not apply when:
 - Dew point is within 5°F (2.77°C) of ambient temperatures.
 - Precipitation, fog, or dew is imminent prior to cure of the product.
 - Freezing temperatures are expected prior to cure of the product.
- B. Existing Conditions
1. Do not apply material unless surface to receive coating is clean and dry.
 2. The existing metal roofing system shall be properly fastened to the surface on which it is applied.
 3. The existing roof and coating system shall be inspected and any areas that are subject to voiding the warranty shall be repaired to compliance.
 4. Applicator shall examine existing conditions affecting this work and shall report all unsatisfactory conditions to the proper authority. Work will not proceed until these conditions have been corrected.

1.7 WARRANTY

- A. Product manufacturer shall warranty that the material supplied will meet or exceed physical properties as specified.
- B. The Contractor guarantees that workmanship will be free of defects in coating application.
- C. Comply with manufacturer's warranty application procedures. A Pre-Project Inspection Report shall be performed by manufacturer and coordinated and submitted by Contractor prior to commencement of work.
- D. Manufacturer shall provide the manufacturer's 10-year standard (minimum) warranty upon receipt of a properly executed warranty request form.

2.0 PRODUCTS

2.1 MANUFACTURER

- A. AMERICAN WEATHERSTAR ACRYLIC ELASTOMERIC ROOF COATING, 8095 Padgett Switch Road, Irvington, AL 36544. 1-800-771-6643, www.americanweatherstar.com – or equal.

2.2 MATERIALS

2.2.1 COATINGS AND RELATED MATERIALS

All materials used shall be manufactured by a single source and shall meet the following product specifications:

2.2.2 ELASTOMERIC COATING SYSTEM

2.2.2.1 ACRYLIC 211

Type: Solar reflective coating Viscosity: 4500 cps
Elongation: 233 ± 20%
Tensile strength: 273 ± 20 psi
Volume solids: 55 ± 2% Color: White, gray, tan

2.2.2.2 ACRYLIC BUTTER-GRADE 221

Type: Flashing grade, brushable caulk
Viscosity: 90,000 cps ± 10,000 cps
Elongation: 200%
Tensile strength: 325 psi
Volume solids: 66% ± 3%
Color: White

2.2.2.3 ACRYLIC BRUSH-GRADE 220
Type: High-solids elastomeric sealant
Viscosity: 70,000 ± 10,000 cps
Elongation: 315%
Tensile strength: 500 psi
Volume solids: 55% ± 3%
Color: White

2.2.2.4 ECOCLEANER 925
Type: Surface Cleaner
VOC: 0 grams/liter
Color: Clear

2.2.2.5 POLYESTER FABRIC
Type: Spun-bound polyester
Viscosity: N/A
Tensile strength: 35 psi

2.2.2.6 RED OXIDE RUST PRIME 912
Type: Rust primer/pre-treatment
Viscosity: 600-800 cps
Elongation: N/A
Tensile strength: N/A
Volume solids: 40% ± 1%
Color: Red

2.3 ACCESSORIES

- A. Fabric reinforcement and waterproofing coverings for expansion joints shall be compatible with specified fluid-applied roofing system.
- B. Miscellaneous materials such as adhesives, metal primers, metal vents and drains shall be a composite part of the roof system and shall be compatible with the fluid-applied roofing system.

3.0 EXECUTION

3.1 EXAMINATION

- A. Inspect existing metal roof surface to receive the coatings. Metal panels which no longer have integrity due to excessive rust and deterioration, shall be replaced as noted in the Drawings. All other areas of rust must be prepared and primed as required. Metal panels with seam gaps of 1/8" or more should be stitched as tight as possible with additional stitch screw fasteners.
- B. Light gauge metal panels that flex open at the horizontal lap seam when walked on, will require additional fastening and/or flashing tape in the pan of the panel to reduce deflection.
- C. Examine existing system for loose fasteners and gapped seams. Pay particular attention to the horizontal seams. Ensure the horizontal seams are tight before detailing.
- D. The above Work, with the exception of replacing metal panels as noted, shall be absorbed in the price bid for providing the roof coating.

3.2 PREPARATION

- A. Protection:
 - 1. Keep products away from heat, sparks and flames. Do not allow the use of spark-producing equipment during application and until vapors are gone. Post "No Smoking" signs.
 - 2. The overspray and/or solvents from spraying fluid-applied roofing materials can carry considerable distances and care should be taken to do the following:

- a. Post warning signs a minimum of 100 feet from the work area.
 - b. Close air intakes into building and/or air conditioner intakes.
 - c. Set up windbreaks when needed.
 - d. Minimize or exclude all personnel not directly involved with the coating application.
 - e. Have CO₂ or other dry chemical fire extinguishers available at the jobsite.
 - f. Provide adequate ventilation.
3. Protect plants, vegetation and animals which might be affected by the coatings. Use drop cloths or masking as required.

B. Surface Preparation:

1. Preparation shall include all requirements specified by product manufacturer to ensure proper adhesion to new materials and to the existing American WeatherStar coating system. (An adhesion test may be necessary.)
2. New galvanized metal surfaces must be allowed to cure a minimum of 90 days prior to application or treated with surface conditioner approved by product manufacturer.
3. Preparation shall include, but not be limited to, the following:
 - a. All unnecessary and non-functional equipment and debris shall be removed from the roof.
 - b. Substrate must be pressure-washed (ECOCLEANER 925 is recommended). A minimum working pressure of 3,000 psi shall be used to remove all dirt, dust, any previous paints or coatings which are delaminating, as well as waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.).
 - c. Roto-spray tip is recommended to expedite metal panel cleaning. Power vacuuming, brooming, high-pressure air, hot water washing or any combination that assures a clean surface may be used.
 - d. HVAC condensate drains shall be properly routed to roof drains or plumbed off the roof.
 - e. All roof penetrations, curbs, vent stacks, laps, wall flashings, and related roof penetrations are to be flashed by others.
 - f. Contractor shall make every effort to mechanically eliminate all ponding water areas on the roof surface prior to application of any roof-coating product.
4. Detail horizontal and vertical metal seams with flashing grade.
5. For seams with excessive gaps as determined by manufacturer, apply mastic per manufacturer specifications.
6. Apply mastic around fasteners to achieve a smooth transition and allow to thoroughly cure.
7. Round projections, machine legs, sign posts, guide wire straps, inside and outside corners, etc., shall be flashed.
8. Clean and seal watertight all drains, gutters, parapet walls and caps. Repair any damaged metal. Caulk and seal watertight all screws, seams, skylights, joints, pipes, voids, protrusions and any areas where water could enter through the roof.
9. Allow roof and other prepared surfaces to dry completely before proceeding with elastomeric coating application.

3.3 APPLICATION

A. Primer Application:

1. Examine substrate to receive roof coating. Do not proceed with installation of the roof coating until all areas of concern have been corrected.
2. Treatment of Existing Patches: Installer shall make every effort to remove all loosely adhered asphaltic roofing elements. Removal efforts must include the use of pressure-washers, scrapers, wire brushes, wire-wheels, or other similar tools.
3. Rust: All areas with any rust must be primed with RED OXIDE RUST PRIME 912 at an approximate rate of 1 gallon per 100-200 square feet depending on severity of rust.
4. Factory Paint and/or Previously Coated: All areas of roof that have been factory painted and/or previously coated should be primed with RED OXIDE RUST PRIME 912 at a rate of 1 gallon per 200 square feet. An adhesion test should be conducted to ensure proper adhesion to the existing paint. Adhesion to the existing roof substrate depends on the condition of any existing coating.

B. Coating Application:

1. Acrylic Brush-Grade 220 shall be delivered to the site ready to use. Thinning is not required nor recommended. Apply with a high-quality synthetic bristle brush.

2. Acrylic 211 may be applied using a medium nap roller, synthetic brush, tank spreader, or airless spray equipment. Apply to clean, dry, sound surfaces free of contaminants and other foreign matter. Depending on temperature and humidity, allow 24-hours between coating applications.

C. Preparation for Coating:

1. Curb Flashings: All curb flashings, including cricket details, must be flashed with at least a 6" wide layer of ACRYLIC BUTTER-GRADE 221. (Min 50 mils DFT)
2. Fasteners: All fasteners must be re-tightened; all stripped fasteners must be replaced with larger diameter fasteners, and the area re-secured by adding a new fastener next to the one that was stripped. All missing fasteners must be replaced with fasteners one size larger than existing (e.g. existing fasteners ¼" to be replaced with 3/8"). Encapsulate all fasteners with ACRYLIC BUTTER-GRADE 221 or ACRYLIC BRUSH-GRADE 220.
3. Gutter straps fastened above roof panels must be totally encapsulated with ACRYLIC BUTTER-GRADE 221.
4. Gaps: All large or excessive gaps existing between roof panels must be closed or made flush with self-drilling fasteners.
5. Horizontal Seams:
 - a. Apply a 4" wide layer of ACRYLIC BUTTER-GRADE 221. (Min 30 mils DFT)
 - b. Extra fasteners may be necessary to properly tighten seams before any application of flashing grade material.
6. Vertical Seams:
 - a. Reinforce all vertical seams: Apply a 2" wide layer of ACRYLIC BUTTER-GRADE 221 or ACRYLIC BRUSH-GRADE 220. (Min 25 mils DFT)
 - b. Standing Seam: All vertical seams should be thoroughly checked to make sure they are properly seamed. If loose seams are found the installer should follow original panel manufacturer's instructions to ensure proper installation of metal.
7. Penetrations: ACRYLIC BUTTER-GRADE 221 shall be applied around base of penetration extending 4" on vertical and 4" on base. (Min 30 mils DFT)
8. Rakes: All fixed rake details for the roof must be secured and sealed with 4" wide layer of ACRYLIC BUTTER- GRADE 221. Extra fasteners may need to be added before detail is applied to ensure a watertight rake. (Min 30 mils DFT)
9. Ridge Caps: Except as noted, all ridge caps must be flashed with a 4" wide layer of ACRYLIC BUTTER-GRADE 221. Extra fasteners may need to be added before detail is applied to ensure a watertight ridge cap. (Min 30 mils DFT)
10. On details listed above (1-9), the following may be substituted as an alternative to using ACRYLIC BUTTER-GRADE 221.
 - a. Three Course Detail (Except detail B and F above)
 - i. A 6" wide layer of ACRYLIC 211
 - ii. One (1) layer of 4" POLYESTER FABRIC
 - iii. A final layer of ACRYLIC 211 that completely encapsulates the POLYESTER FABRIC
 - iv. ACRYLIC 211 must be feathered at least 3" beyond each side of the POLYESTER FABRIC to allow water to flow over the seam.

D. Application Rates:

1. 10 Year System Requirement (15 mil Met-A-Gard System)
 1. Base Coat: Apply base coat of ACRYLIC 211 roof coating at a rate of 1 gallon per 100 square feet.
 2. Top Coat: Apply intermediate coat of ACRYLIC 211 roof coating at a rate of 1 gallon per 100 square feet.
2. Base coat shall be applied parallel to the ribs of the metal panel from one direction.
3. Finish coat shall be applied parallel to the ribs of the metal panel from the opposite direction of the base coat.
4. Each coat must be allowed to dry for 24-48 hours depending on humidity and temperature. The roof is to be inspected for defects, flaws or holidays and repaired if necessary.
5. Each Contractor shall estimate coating requirements based on actual experience and needs to figure in losses due to applicator experience, surface texture, wind, waste, and other factors that can affect actual gallons required.
6. It is the Contractor's responsibility to verify wet and dry mil thickness during the application process to ensure proper dry mil thickness of the total roofing system.

7. The Contractor shall consult with product manufacturers for stretch factor to be applied to determine actual square footage.

3.4 RESTRICTIONS/LIMITATIONS

1. No application of materials shall commence during inclement weather or when precipitation is imminent.
2. No materials are to be applied to wet, dirty, or frozen surfaces.
3. Roof surface shall be cleaned on a regularly scheduled basis to avoid reduction in reflectivity of coating.
4. Do not apply within two hours of sunset, rain, fog or freezing temperatures.
5. Roof coating system must be completely dry before exposing to water or foot traffic.

3.5 CLEANING

- A. In conjunction with the final inspection, all debris, containers, materials and equipment are to be properly removed from the job site. Grounds are to be cleaned, undamaged, and acceptable to the owner.
- B. Dispose of all containers in accordance with state and local environmental regulations.

3.6 PROTECTION

- A. After completion of application, do not allow traffic on coated surfaces for a period of at least 24 hours at 75°F and 50% R.H., or until completely cured.

*** END OF SECTION ***

SECTION 07620
GALVANIZED METAL FLASHING AND TRIM

1.0 **SCOPE**

- 1.1 Work Included: This section covers the work necessary to furnish and install, complete, the flashing and sheet metalwork.
- 1.2 General: See CONDITIONS OF THE CONTRACT and Division 1, GENERAL REQUIREMENTS, which contain information and requirements that apply to the work specified herein and are mandatory for this project.
- 1.3 Submittals during Construction: Submittals during construction shall be made in accordance with Division 1, GENERAL REQUIREMENTS. In addition, the following specific information shall be provided:
 - 1.3.1 Manufacturer's Literature: Catalog data for stock manufactured items.
 - 1.3.2 Samples: Color samples for items to be factory finished.
 - 1.3.3 Shop Drawings: For custom and/or field fabricated sheet metal.
- 1.4 Related Work Specified and Performed under Other Sections:

<u>Section No.</u>	<u>Item</u>
06100	Rough Carpentry
07900	Joint Sealant

2.0 **MATERIALS**

- 2.1 Metal:
 - 2.1.1 Aluminum Sheet: ASTM B 209, Alloy 5005-H34, 0.032-inch (0.81 mm) thick, unless otherwise indicated, factory painted.
 - 2.1.2 Lead Sheet: Solid lead meeting the requirements of Federal Specification QQ-L-201, Grade B, minimum weight 4 pounds per square foot, soft temper, except hard temper for flanges, as shown.
 - 2.1.3 Galvanized Sheet Steel: Copper bearing steel, galvanized per ASTM A 525 and A 526, G 90, commercial quality; thickness 0.0217-inch (26 U.S. Standard gauge, 0.55 mm), unless otherwise shown.
- 2.2 Solder: ASTM B 32, alloy composition Sn 50.
- 2.3 Soldering Flux: ASTM B 32, Type RA.
- 2.4 Isolation Paint: See System No. 27 of Section 09900.
- 2.5 Isolation Tape: Butyl or polysobutylene, internally reinforced, or 20-mil thick minimum polyester.
- 2.6 Fasteners:
 - 2.6.1 For Galvanized Steelwork: Steel, galvanized per ASTM A 153, or stainless steel fasteners.
 - 2.6.2 For Aluminum Work: Stainless steel or aluminum.

3.0 WORKMANSHIP

3.1 General:

3.1.1 Examine all surfaces involving sheet metal. Report any improper or defective surfaces; do not commence work until defective surfaces are corrected.

3.1.2 All workmanship shall be equal to the best standards of practice in modern sheet metal. Work shall be accurately formed to sizes, shapes, and dimensions indicated and detailed, with all angles and lines in true alignment.

3.2 Fabrication of Flashing:

3.2.1 Pipe penetrations through roof shall be flashed with lead.

3.2.2 Take measurements at the job and be responsible for same.

3.2.3 Fabricate in accordance with reference standards.

3.2.4 Form arris and angles true to line and surfaces free of waves and buckles.

3.2.5 Form bends to 1/16-inch inside radius.

3.2.6 Hem exposed edges.

3.2.7 Reinforcements and supports shall be same material as flashing unless other material is indicated; provide as required. Steel, where indicated or required, shall be galvanized.

3.2.8 Rigid joints and seams shall be made mechanically strong. Seal aluminum joints with sealant.

3.2.9 Fabricate sheet metal in 10-foot maximum lengths, unless otherwise indicated.

3.2.10 Fabricate corners in one piece with legs extending 30 inches each way to field joint. Lap, rivet, and solder corner seams watertight.

3.2.11 Neutralize soldering flux.

3.2.12 Solvent clean all sheet metal. Surfaces to be in contact with roofing or otherwise concealed shall be coated with specified asphalt paint.

3.3 Installation:

3.3.1 Flashing:

3.3.1.1 Conform to reference standards; coordinate flashing work with roofing work; sheet metal and roofing shall make watertight and watertight assembly.

3.3.1.2 Isolate metal from wood and concrete and from dissimilar metal with two coats of specified asphalt paint or isolation tape. Use only stainless steel fasteners to connect isolated dissimilar metals.

3.3.1.3 Flashings shall have joints at 10-foot maximum spacing and at 2-1/2 feet from corners. Joints shall be butted with 3/16-inch space centered over matching 8-inch long backing plate with sealer tape in laps.

3.3.1.4 Set flanges of flashings and roof accessories on continuous sealer tape or in plastic roof cement on top of envelope ply of roofing. Nail flanges through sealer tape and at 30 inch maximum spacing. Touch up asphalt paint on flanges.

- 3.3.1.5 Joints, fastenings, reinforcements, and supports shall be sized and located as required to preclude distortion or displacement due to thermal expansion and contraction.
- 3.3.1.6 Provide continuous hold-down clips at all counterflashing.
- 3.3.1.7 Conceal fastenings wherever possible.
- 3.3.1.8 Flashing and sheet metal shall be set to straight, true lines with exposed faces aligned in proper plane without bulges or waves as indicated.
- 3.4 Finish: Exposed surfaces of flashing and sheet metalwork shall be free of dents, scratches, abrasions, or other visible defects, and shall be clean and ready for painting where applicable.
- 3.5 Delivery, Handling and Storage: Materials shall be adequately packaged and protected during shipment and shall be inspected for damage, dampness, and wet-storage stains upon delivery to the jobsite. Damaged or permanently stained materials that cannot be restored to like-new condition shall be removed from the jobsite and shall be replaced at no additional cost to the Owner. Sheet metal items shall be carefully handled to avoid damage to surfaces, edges, and ends. Crated materials shall not be uncrated until ready for use. Materials shall be stored in dry, weathertight, ventilated areas until immediately before installation.

4.0 PAYMENT

- 4.1 General: Payment for the work in this section will be included as part of the lump sum bid amount.

SECTION 09906 HIGH-PERFORMANCE FIELD COATINGS

1.0 GENERAL

1.1 The Work in this Section shall include furnishing all materials, equipment, and labor necessary for the surface preparation and application of high-performance coating system, shop-applied or field-applied, on new (uncoated) and existing (coated) exterior steel components. It is the intent of this Project that all existing primary and secondary metal building components be coated by award of the Alternates.

1.2 RELATED SECTIONS

Division 01 General Requirements
Section 05125 Metal Building Components

1.3 MEASUREMENT AND PAYMENT

Payment for Work in this Section shall be included in the unit price/lump sum price as outlined in the Bid. Bid price shall include all cost of labor, materials, and incidentals complete.

1.4 REFERENCES

The publications listed below form part of this specification. Each publication shall be the latest revision and addendum in effect on the date this specification is issued for construction unless noted otherwise. Except as modified by the requirements specified herein or the details of the Drawings, Work included in this specification shall conform to the applicable provisions of these publications.

ISO 8501-1	Sa2 Thorough Blast Cleaning
SSPC-PA-1	Shop, Field, and Maintenance Coating of Metals
SSPC-SP2	Hand Tool Cleaning
SSPC-SP3	Power Tool Cleaning
SSPC-SP6/NACE No. 3	Commercial Blast Cleaning
SSPC-SP7/NACE No. 4	Brush-Off Blast Cleaning
SSPC-SP10/NACE No. 2	Near-White Blast Cleaning

1.5 SUBMITTALS

The following shall be submitted in accordance with "Section 01330 – Submittals", in sufficient detail to show full compliance with the specification:

SD-01 Product Data: For each type of product indicated, include the following:

- a. Preparation requirements and application instructions:
 1. Indicate VOC content.
- b. Cross-reference to paint system and locations of application areas. Use same designations indicated in schedules.
- c. Manufacturer's Certification of Compliance with referenced specifications and standards signed by Manufacturer's Representative.

SD-02 Contract Closeout: Provide the following:

- a. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.
- b. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Paint: 10% or 1 gallon, whichever is greater, of each material and color applied.
- c. Provide 1 year warranty against defective workmanship and materials.

1.6 QUALITY ASSURANCE

1.6.1 All Work to apply the specified protective coatings to coated or uncoated metal surfaces shall be provided in accordance with the requirements of SSPC-PA-1.

1.6.2 Provide products of same manufacturer for each coat in a coating system.

1.6.3 Independent Testing by Contractor

1.6.3.1 Should the Engineer/Owner observe unapproved material on-site, suspect improper millage of coating, or any other evidence of workmanship not complying with these specifications, then the Engineer/Owner reserves the right to invoke the following procedure:

1.6.3.1.1 Direct the Contractor to engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken.

1.6.3.1.2 Direct the Contractor to engage the services of a qualified testing agency to perform tests for compliance with product application requirements.

1.6.3.1.3 Contractor may be directed to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

1.7 DELIVERY, STORAGE, AND HANDLING

1.7.1 Delivery and Handling

1.7.1.1 Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacture's label with the following information:

1. Product name and type (description).
2. Batch date.
3. Color number.
4. VOC content.
5. Environmental handling requirements.
6. Surface preparation requirements.
7. Application instructions.

1.7.2 Storage and Protection

1.7.2.1 Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.8 PROJECT/SITE CONDITIONS

1.8.1 Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 95 deg F.

1.8.2 Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.8.3 Do not apply exterior coatings in snow, rain, fog, or mist.

1.8.4 Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work. If suspected hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner.

1.8.5 The Contractor shall provide and maintain the equipment necessary to monitor and document the temperatures, relative humidity, dew point, etc. as required for application.

1.9 WARRANTY

1.9.1 The Contractor and coating manufacturer shall jointly and severally warranty to the Owner and guarantee the Work under this Section against defective workmanship and materials for a period of 1 year commencing on the date of final acceptance of the Work.

1.10 FACTORY-APPLIED COATINGS

1.10.1 Submit to the Engineer for review, manufacturer's certification that states factory applied coating system meets or exceeds requirements specified herein.

2.0 PRODUCTS

2.1 MANUFACTURERS

2.1.1 Basis-of-Design Product is Carboline, or equal. Products indicated in Section 3.6 SCHEDULE. Sherwin-Williams product as scheduled or equal will be considered.

2.1.2 Source Limitations: Obtain paint materials from single source from single listed manufacturer.

2.2 MATERIALS

2.2.1 High-Performance Coatings, General

2.2.1.1 Material Compatibility

2.2.1.1.1 Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2.2.1.1.2 For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.

2.2.1.2 VOC Content

2.2.1.2.1 For field applications that are inside the weatherproofing system, paints and coatings shall comply with VOC content limits of authorities having jurisdiction.

2.2.1.3 Colors: as scheduled in Section 3.6.

3.0 EXECUTION

3.1 EXAMINATION

3.1.1 Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing primers and finishes. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

3.1.2 Report in writing conditions that may affect application, appearance, or performance of paint.

3.1.3 Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

3.1.4 Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

- 3.1.5 Method(s) used in the actual cleaning shall be the one(s) which provide the necessary level of cleanliness with the least amount of surface alteration.
- 3.2 PREPARATION
- 3.2.1 Items not to be painted which are in contact with or adjacent to, below, or in the vicinity of surfaces to be painted shall be removed or protected prior to surface preparation and painting operations. Items may include, but shall not be limited to, product stored in warehouse, electrical components and fire sprinkler components. The Contractor will not be required to protect the floor or inside face of walls from overspray.
- 3.2.2 Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- 3.2.3 Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- 3.2.4 Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and defective or incompatible paints and encapsulants. For new steel (bare metal) and existing previously primed steel, prepare in accordance with the specified SSPC/NACE. Prepare primed surfaces prior to intermediate coat, in accordance with ISO 8501-1 Sa 2.
- 3.2.4.1 It is not necessary to remove all previous coats of primer or paint if the previous coat is adhere soundly and fully and is compatible with the new paint system.
- 3.2.5 Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.
- 3.2.6 New Steel Substrates: Clean, prepare, and protect surface as per the specified SSPC. Clean using methods recommended in writing by paint manufacturer but not less than the following:

SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning." (minimum)
- 3.2.7 Existing Primed Steel Substrates (including all existing exposed steel components and existing column bases to be concealed in concrete): Clean field welds, bolted connections, and abraded areas shop primed or painted. Coat exposed areas with the same material as used for shop priming, or with product as accepted in writing by manufacturer, using method recommended in writing by paint manufacturer but not less than the following:

Water Jet at 5,000 PSI. (minimum)
SSPC-SP2 Hand Tool Cleaning (Contaminants)
SSPC-SP3 Power Tool Cleaning (Contaminants)
- 3.2.8 Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.
- 3.2.9 All waste material shall be considered hazardous material and shall be collected and properly disposed of at the end of each workday.
- 3.2.10 Remove only as much paint and rust each day as can be primed that same day. Bare iron and steel will begin to rust again within a matter of hours. Allowing unprotected, bare material to be exposed overnight is prohibited.
- 3.2.11 Using high heat as a method to prepare for primer and paint is prohibited.

3.2.12 Existing welds and adjacent areas shall be prepared such that there is: (1) no undercutting or reverse ridges on the weld bead, (2) weld spatter on or adjacent to the weld or any other area to be painted, and (3) no sharp peaks or ridges along the weld bead. All embedded pieces of electrode or wire shall be ground flush with the adjacent surface of the weld bead.

3.2.13 All sharp edges shall be rounded or chamfered, and all burrs, jagged edges, and surface defects shall be ground smooth.

3.3 APPLICATION

3.3.1 Follow all appropriate regulations provided by the EPA Regional office and/or the State office.

3.3.2 Apply high-performance coatings according to manufacturer's written instructions.

3.3.3 Use applicators and techniques suited for coating and substrate indicated.

3.3.4 Prime as soon as possible after surfaces have been prepared and before rust has a chance to form again. Before installation of new material, coat all surfaces with prime coat only.

3.3.5 Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

3.3.6 Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat but provide sufficient difference in shade of undercoats to distinguish each separate coat.

3.3.7 If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

3.3.8 Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections.

3.3.9 Paint Mixing: Multiple-component coatings shall be prepared using all of the contents of the container for each component as packaged by the paint manufacturer. No partial batches will be permitted. Multiple-component coatings that have been mixed shall not be used beyond their pot life. The Contractor shall provide small quantity kits for touchup painting and for painting other small areas. Only the components specified and furnished by the paint manufacturer shall be mixed. No intermixing of additional components for reasons of color or otherwise, even within the same generic type of coating, will be permitted.

3.3.10 Paint materials shall be kept sealed when not in use.

3.3.11 Coverage is listed as either total minimum dry film thickness in mils (MDFT). The number of coats is the minimum required irrespective of the coating thickness. Additional coats may be required to obtain the minimum required paint thickness, depending on method of application, differences in manufacturers' products, and atmospheric conditions. Maximum film build per coat shall not exceed the coating manufacturer's recommendations.

3.3.12 Particular attention shall be given edges, angles, flanges, etc. Where insufficient film thicknesses are likely to be present, ensure proper millage in these areas.

3.3.13. When applying the coating system to the members adjacent to existing metal wall or roof panels, the contractor shall protect the metal panels from overspray. Overspray will be acceptable only if the Contractor cleans and prepares any areas subject to overspray and applies the finish coat over the area of overspray. The finish coat shall be provided (3 to 5 mils DFT) covering all areas of prime and/or intermediate coats. The finish coat has been specified as a gray color to blend with the back side of the panels. Upon completion of the project, any primer coats visible from the ground level will not be acceptable.

3.3.14. Deteriorated/rusted roof panels at overlaps shall be coated with product noted in Section 3.6.1.2. This coating may be applied in conjunction with addressing any overspray.

3.4 FIELD QUALITY CONTROL

3.4.1 Dry Film Thickness Testing: The services of a qualified testing and inspecting agency may be engaged to inspect and test coatings for dry film thickness.

3.4.1.1 Contractor shall touch up and restore coated surfaces damaged by testing.

3.4.1.2 If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

3.5.1 At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

3.5.2 After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

3.5.3 Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Professional, and leave in an undamaged condition.

3.5.4 At completion, all painted surfaces and coatings shall be inspected. All damaged spots, whether due to defective materials or workmanship or defects of surfaces covered shall be touched up and the finish restored. Areas to be touched up shall be clean to comply with SSPC-PA1. Additional coats of paint and coatings required to cover all spots or discoloration of every sort shall be applied at no additional costs to the Owner.

3.6 SCHEDULE

3.6.1 Steel Substrates:

3.6.1.1 New Construction (Bare Steel):

a. Prime Coat: Zinc Epoxy

1. Carboline Carboguard 859 (Green 0300) at 3 to 5 mils DFT

b. Finish: High-Performance Epoxy

1. Carboline Carbothane 615 (Gray 0700) 5 to 10 mils DFT

or

2. Sherwin-Williams SeaGuard 6100 (Gray) 2 coats, 6 to 12 mils DFT

3.6.1.2 Maintenance Over-Coat System (Existing Primed Primary and Secondary Steel):

a. Finish: High-Performance Epoxy

1. Carboline Carbothane 615 (Gray 0700) 5 to 10 mils DFT

or

2. Sherwin-Williams SeaGuard 6100 (Gray) 2 coats, 6 to 12 mils DFT

*** END OF SECTION ***