CIVIL & SPORTS DESIGN ENGINEERING
YOUR TEAM OF CHOICE

April 9, 2026

TO: All Bidders

From: Civil and Sports Design Engineering, LLC

ADDENDUM NUMBER 1, ST. CHARLES PARISH DOG PARK, PROJECT NO. RECBP219

This Addendum shall be considered part of the Contract Documents for the same above mentioned project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original Contract Documents, this Addendum shall govern and take precedence.

Bidders are hereby notified that they shall make any necessary adjustments in their estimates on account of this Addendum. It shall be understood that each Bidder's proposal is submitted with full knowledge of all modifications and supplemental data specified herein.

1. Disregard the Specifications that were uploaded to Central Bidding dated February 27, 2026. They should be replaced with the attached Specifications dated March 16, 2026.

ATTACHMENT(S):
Specifications dated March 16, 2026 (391 Pages)

Civil & Sports Design Engineering, LLC

4/9/2026
Date

CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR:

DOG PARK
PROJECT NO. – RECBP219
801 Deputy Jeff G Watson Dr., Luling, LA 70070

OWNER:

ST. CHARLES PARISH

ST. CHARLES PARISH GOVERNMENT
MATTHEW JEWELL
PARISH PRESIDENT

TECHNICAL SPECIFICATIONS PREPARED BY:
CIVIL & SPORTS DESIGN ENGINEERING, LLC
Monday, March 16, 2026

STATE OF LOUISIANA
MARCO JOSE JUAREZ TIJERINO
License No. 40328
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

MARCO J. JUAREZ, P.E.

3/16/2026
DATE

DISCLAIMER:

It is the sole responsibility of the Contractor to read and understand all terms and provisions contained in this document, as it is a legally binding contract. Contractors are encouraged to consult legal counsel prior to its execution.

ST. CHARLES PARISH
LOUISIANA

MATTHEW JEWELL
PARISH PRESIDENT

BRENDA J. CAMPOS
PROCUREMENT OFFICER

ST. CHARLES PARISH

PROCUREMENT

SPECIAL ANNOUNCEMENT

Electronic Procurement: Beginning June 1, 2026, St. Charles Parish will no longer accept physical/manual bid submissions. These submissions will only be accepted electronically via the Parish's e-Procurement system, Central Bidding. Submitting electronic bids is secure and free of charge. Central Bidding can be accessed by visiting www.centralauctionhouse.com. All vendors will be required to register with Central Bidding via following link: www.centralauctionhouse.com/SignUp

Bidders should read and must comply with all specific instructions and announcements pertaining to each bid. Until June 1, 2026, bidders may hand deliver or use mail as alternative methods of bid submissions. However, effective June 1, 2026, all bid submissions will only be accepted via Central Bidding.

Electronic Bond Submission May Be Required

Effective June 1, 2026, if the bid documents require a surety, vendors submitting responses to St. Charles Parish through this site must submit an electronic bond through the respective online clearinghouse bond management system(s). You may click the link below to use and learn more: https://www.centralauctionhouse.com/central-bidding/bid-bonds

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Section 16200	Panelboards

SECTION 00005

ENGINEER CERTIFICATION

The following Contract Documents and Technical Specifications have been prepared under my direct supervision and guidance in conjunction with the Plans and for the explicit use by the Owner and Contractors for the bidding and construction of the Project:

DOG PARK

PARISH PROJECT NO. RECBP219

Monday, March 16, 2026

DIVISION 02	**SITE WORK**
Section 02200	Site Preparation and Restoration
Section 02204	Filling and Leveling Park Areas
Section 02221	Excavation, Backfilling for Trenches, Pavement, and Structures
Section 02225	Excavation, Filling, and Grading
Section 02230	Site Clearing
Section 02300	Aluminum Ornamental Fence System
Section 02400	Trench Safety System
Section 02510	Site Water Distribution Piping
Section 02530	Site Sanitary Sewer Piping
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Section 06105	Miscellaneous Carpentry
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Section 10730	Specialties Manufacturer of Protective Covers
Section 10800	Toilet and Bath Accessories

DIVISION 15 **MECHANICAL**
Section 15500 Plumbing
Section 15520 Piping and Valves

DIVISION 16 **ELECTRICAL**
Section 16005 Minor Electrical Demolition for Remodeling
Section 16010 Basic Electrical Requirements
Section 16050 Basic Electrical Materials and Methods
Section 16200 Panelboards

SECTION 00008

PROJECT DIRECTORY

OWNER:

ST. CHARLES PARISH
15045 RIVER ROAD
P.O. BOX 302
HAHNVILLE, LA 70057
Phone: 985-783-5095
Fax: 985-783-5095
Contact: Duane Foret, Director Parks and Recreation
Email: dforet@stcharlesgov.net

PRINCIPAL PROJECT ENGINEER:

CIVIL & SPORTS DESIGN ENGINEERING, LLC
14433 RIVER ROAD
HAHVILLE, LA 70057
Phone: 985-785-2380
Email: mjuarez@hebertengineering.com

END OF DOCUMENT

SECTION 00010

ADVERTISEMENT FOR BIDS

The Parish of St. Charles, hereby advertises bids for construction of the **Dog Park, Project Number RECBP219** as follows:

Owner: **St. Charles Parish**

Project Title: **Dog Park**

Project No.: **RECBP219**

Bid No.: **#1050**

Principal Work Location: 801 Deputy Jeff G Watson Drive, Luling, LA 70070

Description of Basic Work: New Dog Park, including restroom, filling, grading, and pavement

Bids: Separate sealed Bids will be received by the ST. CHARLES PARISH COUNCIL RECORDS OFFICE, Parish of St. Charles, 15045 River Road, Courthouse 3rd Floor, Hahnville, Louisiana, 70057, either by registered or certified mail with return receipt requested, or hand delivered, or electronically submitted at www.centralbidding.com, **no later than 2:00 p.m. local time on Thursday, May 7, 2026**. Promptly thereafter, the bids will be publicly opened and read aloud in the Council Chambers of the St. Charles Parish Court House. The Owner reserves the right to reject any and all Bids in accordance with the Public Bid Law, and to disregard all nonconforming, nonresponsive, unbalanced or conditional Bids.

Bidding Documents: The Bidding Documents (Contract Documents, Specifications and Drawings) are available to Contractors who are properly licensed in Louisiana or to bona fide suppliers of materials and equipment for purchase and/or review at the office of the Engineer for the contract, Civil & Sports Design Engineering, LLC, Marco J. Juarez, P.E., 14433 River Road, Hahnville, LA 70057.

A payment of $125.00 in cash or check payable to the Engineer will be required for each complete set of the Bidding Documents. This payment is refundable as provided in the La.R.S.38:2212(D).

Pre-Bid Conference: A Pre-Bid Conference to discuss the scope of the project and the requirements of the Bidding and Contract Documents will be held on **Tuesday, April 28, 2026, at 2:00 p.m. at the Edward A. Dufresne Community Center, 274 Judge Edward Dufresne Parkway, Luling, Louisiana**. Attendance of the Pre-Bid Conference is **Non-Mandatory**.

Each bidder must deposit with his/her bid, security in the amount equal to five percent (5%) of the total bid in the form of a certified check, cashier's check or bid bond. If the bid is submitted electronically and a certified or cashier's check is used for bid bond, then the actual check shall be delivered to the ST. CHARLES PARISH COUNCIL RECORDS OFFICE, Parish of St. Charles,

15045 River Road, Courthouse 3rd Floor, Hahnville, Louisiana, 70057. Electronic bids shall contain all the same documents that are required in a physically delivered bid.

The outside of the bid envelope must contain the submitting firm's name, Louisiana Contractors License Number, the St. Charles Parish Project Number, and the St. Charles Parish Project Title.

St. Charles Parish is an Equal Opportunity Employer. We encourage all small and minority-owned firms and women's business enterprises to participate in this solicitation.

Any person with disabilities requiring special accommodations must contact the St. Charles Parish Council Office at 985-783-5000 no later than seven (7) days prior to bid opening.

St. Charles Parish Council
Matthew Jewell, Parish President

Advertisement Source and Dates:

St. Charles Herald Guide
St. Charles Parish Website
Central Auction House

Thursday, April 09, 2026
Thursday, April 16, 2026
Thursday, April 23, 2026

SECTION 00100

INSTRUCTIONS TO BIDDERS

OBLIGATION OF BIDDER: The submittal of a bid will be understood to indicate that the bidder has inspected the work site and has become thoroughly familiar with the plans, general provisions, special provisions, supplemental specifications, and technical specifications. The failure or omission of any bidder to examine any of the above shall in no way relieve him from any obligation in respect to his/her bid.

BID FORMS: Bids/Proposals shall be prepared pursuant to Louisiana Public Bid Law as follows:

Forms to be completed for bid are as follows:

1. Louisiana Uniform Public Work Bid Form (Section-SCP-E-00300);

2. Bid Security or Bid Bond (Section-SCP-E-00410). See La. R.S. 38:2212 (B)(2);

3. Corporate Resolution Authorizing Signing of Bid (Section-SCP-E-00485) La. R.S. 38:2212 (B)(2) or such documents that comply with La. R.S. 38:2212 (B)(5).

The following documents will be required within ten (10) days of bid opening from the apparent Low Bidder:

1. Employment Status Verification Affidavit (Section-SCP-E-00475). See La. R.S. 38:2212 (B)(3)(a);

2. Non Collusion and Non Solicitation Affidavit (Section-SCP-E-00480). See La. R.S. 38:2224;

3. Attestation Clause (Section-SCP-E-00470) See La. R.S. 38:2227;

Deliver all documents to Engineer

SECTION 00101

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

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SECTION 00101

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

ARTICLE 1. DEFINED TERMS

Terms used in these Instructions to Bidders which are defined in the General Conditions of the Construction Contract have the meanings assigned to them in the General Conditions.

The term "Bidder" means one who submits a Bid directly to Owner, as distinct from a "Sub-Bidder", who submits a Bid or quote to the Bidder. Where the term “Bidder” or “Sub-Bidder” is used, where applicable, the terms will be synonymous with “Contractor” or “Subcontractor”, respectively.

The term "Successful Bidder" means the Lowest Responsible Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) proposes to make an award.

The term "Bidding Documents" includes the Contract Documents and Specifications and Drawings (including all Addenda issued prior to receipt of bids), and any other documents deemed by the Owner as necessary Bidding Documents. Subsequent to the opening of the bids, all documents, including those formally referred to as “Bidding Documents” shall be collectively referred to as “Contract Documents”.

The term “Engineer” shall mean that individual designated by the engineering firm and agreed or approved by the Owner who is authorized to make contract or addendum decisions on behalf of the Owner for the Project; upon approval by the Owner the changes will be submitted to Bidders in writing via Addenda.

ARTICLE 2. COPIES OF BIDDING DOCUMENTS

2.1 Complete sets of Bidding Documents in the number and for the sum stated in the Advertisement for Bids may be obtained as stated in the Advertisement for Bids.

2.2 Complete sets of Bidding Documents must be used in preparing bids; neither Owner nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents by Bidders and their Subcontractors.

2.3 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

2.4 No Bidding Documents shall be issued later than twenty-four (24) hours prior to the hour and date set for receiving bid proposals as provided by La. R.S. 37:2163(B)

ARTICLE 3. QUALIFICATIONS OF BIDDERS

3.1 Bidders on projects in the amount of fifty thousand dollars ($50,000) or more shall be required to have a Louisiana Contractors license for **Building Construction** and/or any other classification applicable to the work in compliance with Louisiana State Licensing Board for Contractors and in compliance with La. R.S. 37:2150 et seq.

3.2 The following reasons may be considered as being sufficient for the disqualification of a Bidder and the rejection of his bid proposal or proposals, however, this list is not all inclusive:

a) More than one bid received for the same work from an individual, firm or partnership, a corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one bid for the same work will cause the rejection of all such bids in which the Bidder is interested.

b) If there are reasonable grounds for believing that collusion exists among the Bidders, the bids of participants in such collusion will not be considered. Participants in such collusion will receive no recognition as Bidders for any future work until any such participant shall have been reinstated as a qualified Bidder.

c) Default of any contract in force with the Owner or that the Bidder is or has been in litigation with the Owner within the past five (5) years.

3.3 Should a Bidder be disqualified, a written notice will be given which contains specific language stating the proposed disqualification with all reasons therefore. The Bidder will be given the opportunity to be heard at an informal hearing to refute the reasons for the disqualification. After the hearing and prior to award of the Contract, the Bidder will be given a written note of disqualification stating the reasons therefore if disqualification is found.

ARTICLE 4. EXAMINATION OF BIDDING DOCUMENTS AND SITE

4.1 It is the responsibility of each Bidder, before submitting a bid, to (a) examine the Bidding Documents thoroughly; (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work; (c) consider federal, state and local laws, ordinances, permit requirements, and rules and regulations that may in any manner affect cost, progress, performance or furnishing of the Work; (d) study and carefully correlate Bidder's observations with the Bidding Documents; and (e) notify Engineer of all conflicts, errors or discrepancies in the Bidding Documents requiring correction, clarification, or interpretation.

4.2 Reference is made to the Information Available to Bidders (Section SCP-E-00200) for identification of:

4.2.1 Those reports of explorations and tests of subsurface conditions at the site which have been utilized by Engineer in preparation of the Bidding Documents. Bidder may rely upon the accuracy of the technical data contained in such reports but not upon non-technical data, interpretations, or opinions contained therein or for the completeness thereof for the purposes of bidding or construction.

4.2.2 Those drawings of physical conditions in or relating to existing surface and subsurface conditions (except underground facilities) which are at or contiguous to the site which have been utilized by Engineer in preparation of the Bidding Documents. Bidder may rely upon the accuracy of the technical data contained in such drawings but not upon the completeness thereof for the purposes of bidding or construction.

4.2.3 Copies of such reports and drawings will be made available by Owner for inspection by any Bidder on request. Those reports and drawings may not be part of the Bidding Documents, but the technical data contained therein upon which Bidder is entitled to rely as provided in Paragraphs 4.2.1 and 4.2.2 are incorporated therein by reference. Such technical data has been identified and established in Information Available to Bidders (Section SCP-E- 00200).

4.3 Information and data reflected in the Bidding Documents with respect to underground facilities at or contiguous to the site are based upon information and data furnished to Owner and Engineer by owners of such underground facilities or others, and Owner does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the General Conditions, (Section SCP-E-00700).

4.4 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, underground facilities and other physical conditions, and possible changes in the Bidding Documents due to differing conditions appear in Article 5 of the General Conditions, (Section SCP-E-00700).

4.5 Before submitting a Bid, each Bidder may, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies, and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and underground facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance, or furnishing the Work in accordance with the time, price and other terms and conditions of the Bidding Documents.

4.6 Upon written request at least fifteen (15) days before bids are to be submitted, Owner will provide each Bidder access to the site to conduct such explorations and tests as each 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.

4.7 The lands upon which the Work is to be performed, right-of-ways and servitudes for access thereto and other lands designated for use by Bidder in performing the Work are identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Bidder. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents.

4.8 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 such means, methods, techniques, sequences, or procedures of construction as may be indicated in or required by the Bidding Documents, and that the Bidding Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions of performance and furnishing of the Work including requirements of any and all permits if applicable to this Contract.

ARTICLE 5. INTERPRETATIONS AND ADDENDA

5.1 All questions about the meaning or intent of the Bidding Documents are to be directed to the Engineer. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than seven (7) working days prior to the date for opening of bids may not be answered. Only answers to questions by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner or Engineer.

5.3 No addenda will be issued within seventy-two (72) hours of the advertised bid time, exclusive of Saturdays, Sundays, and legal holidays without extending the bid period. If the necessity arises to issue an addendum modifying plans and specifications within the seventy-two (72) hour period prior to the advertised time for the opening of bids, then the opening of bids shall be extended to not less than seven (7) nor more than twenty-one (21) working days. See La. R.S. 38:2212(O)(2)(b).

5.4 Addenda may be issued, as authorized by La. R.S. 38:2212(O).

ARTICLE 6. BID SECURITY

6.1 Each Bid must be accompanied by bid security made payable to Owner in an amount of five percent (5%) of the Bidder's maximum bid price and in the form of a certified or cashier’s check or a Bid Bond, (Section SCP-E-00410) issued by a

surety meeting the requirements of Paragraph 6.01 of the General Conditions, (Section SCP-E-00700) and Paragraph 6.3 below.

6.2 The Bid Security of the apparent Lowest Responsible Bidder will be retained until such Lowest Responsible Bidder has executed the Contract, (Section-SCP-E-00500) and furnished the required Payment and Performance Bonds (Sections-SCP-E-00610 and 00611), whereupon the Bid Security will be returned. If the apparent Lowest Responsible Bidder fails to execute and deliver the Contract and other documents requested in the Notice of Award (Section SCP-E-00810) by the date stipulated, Owner may annul the Notice of Award and the Bid Security of that Lowest Responsible Bidder will be forfeited. The Bid Security of any Bidder whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the forty-sixth (46^{th}) day after the bid opening, whereupon Bid Security of such Bidders will be returned. Bid Security of other Bidders will be returned approximately seven (7) days after the bid opening. The Owner and the Lowest Responsible Bidder may mutually agree in writing to extend the deadline for award by one or more extensions of thirty (30) calendar days, as provided in La. R.S. 38:2215 (A).

6.3 If a Bid Bond is used, it shall be written by a surety or insurance company currently on the U.S. Department of Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company with at least an A-rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent (10%) of policyholders' surplus as shown in the A.M. Best's Key Rating Guide. Company must have a registered agent in the State of Louisiana, as provided by La. R.S. 38:2218(C).

ARTICLE 7. CONTRACT TIME

7.1 The Bidder is advised that time is of the essence on this project, and he shall substantially complete the work as specified in the Contract (Section-SCP-E-00500), in all details.

7.2 Since the Contract Time is calculated on a calendar basis it shall consist of the consecutive number of calendar days stated above including all Saturdays, Sundays, and holidays as designated by the State of Louisiana.

7.3 Furthermore the Bidder is advised that regardless of any other contracts he has with the Owner, work on this project shall begin no later than ten (10) calendar days after the date to begin work as stipulated in the Notice to Proceed or a mutually agreed upon date. Failure to start construction within the ten (10) days grace period and/or conduct the Work in such manner or with sufficient materials, equipment and labor necessary to insure completion within the above aforementioned Contract Time may be cause for default of the contract.

ARTICLE 8. LIQUIDATED DAMAGES

8.1 Owner and Lowest Responsible Bidder recognize that the Owner will suffer direct financial loss if Work is not completed within the Contract Time specified plus any extensions thereof allowed in accordance with the General Conditions of this Contract, and therefore, time is of the essence. They also recognize the delays, expense and difficulties involved in proving in a legal preceding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Contractor and Surety agree to forfeit and pay Owner One Thousand dollars ($1,000.00) per day as Liquidated Damages for delay (but not as a penalty). Such Liquidated Damages will be assessed for each calendar day that expires after the Contract Time. This amount represents a reasonable estimate of Owner's expenses for extended delays and the costs associated therein. This provision shall be effective between the parties ipso facto and without demand or putting in default, it being specifically agreed that the Contractor by his mere failure to complete the work on or before the date specified shall be deemed in default.

ARTICLE 9. SUBSTITUTE MATERIALS OR PRODUCTS

9.1 In unusual cases where a closed specification has been justified for prior acceptance by the Owner in conformance with La. R.S. 38:2291 and La. R.S. 38:2292, the naming of that product in the Drawings and Specifications will be followed by wording indicating that no substitution is permitted.

9.2 The name of a certain brand, make, manufacturer, or definite specifications is to denote quality standard of the article desired, but does not restrict Bidders to the specific brand, make manufacturer, or specification named. It is set forth to convey to prospective Bidders the general style, type character, and quality of article desired.

9.3 For selected materials and equipment, several alternative suppliers or manufacturers are identified in the Schedule of Suppliers (Section-SCP-E-00450). The Bidder is required to indicate which of the identified suppliers will be used in the Work. If the Bidder fails to indicate which of the identified suppliers he proposes to furnish, it is agreed that the Bidder shall furnish the product of the first named supplier for each product.

9.4 If a potential supplier wishes to submit for prior approval a particular product other than a product specified in the Bidding Documents, he shall do so no later than seven (7) working days prior to the opening of bids. Within three (3) working days, exclusive of state holidays and weekends, after such submission, the Engineer shall furnish to both the Owner and the potential supplier written approval or denial of the product submitted. Requests for prior approval shall be issued through a General Bidder. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cut sheets, performance and test

data, and all other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment, or Work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the Bidder. The Engineer's decision of approval or disapproval of a proposed substitution shall be final. If Engineer approves any proposed substitution, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not reply upon approvals made in any other manner.

9.5 After the receipt of Bids, the Contract, if awarded, will be on the basis of material and product described in the Drawings or specified in the Specifications. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or equal" item of material or product may be furnished or used by Bidder if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the "effective date" of the Agreement.

9.6 The intent of the Specifications is, to the greatest extent, to list materials and products of predominant origin within the United States. The Bidder is encouraged, but not required, to acquire materials and products of predominant origin within the United States unless a “Buy American” clause is included in the Bidding Documents.

ARTICLE 10. SUBCONTRACTORS

10.1 The Contractor shall furnish at the Pre-Construction Conference, to the Owner and the Engineer, in writing, the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. No payments to the Contractor shall be made until this information is received.

10.2 The contractor shall not sublet any portion of the contract, excluding material, without written consent, including work sublet to an authorized Disadvantaged Business Enterprise. If such consent is given, the contractor will be permitted to sublet a portion of the work, but shall perform with the contactor’s own organization work amounting to at least 50 percent of the total contract cost. Any items designated in the contract as “Specialty Items” may be performed by subcontract and the cost of such may be deducted from the total contract cost before computing the amount of work required to be performed by the contractor with the contractor’s own organization.

10.3 A Subcontractor shall not further subcontract to a third party any portion of this authorized work, excluding material, without written consent, including work sublet to an authorized Disadvantaged Business Enterprise.

10.4 No Subcontract shall relieve the contractor of liability under the contract and bonds.

10.5 All Subcontractors being assigned a portion of the Work in the amount of fifty-thousand dollars ($50,000) or more must possess a current Louisiana Contractor's license of the proper classification, as provided by La. R.S. 37:2162(b). If requested by the Owner or Engineer, the apparent Lowest Responsible Bidder, and any other Bidder so requested, shall, within two (2) days after the date of the request, submit to Owner an experience statement with pertinent information as to similar projects and other evidence of qualification for each of its Subcontractors, persons or organizations as set forth in Article 17.

10.6 No Bidder shall be required to employ any Subcontractor, Supplier, other person, or organization against whom he has reasonable objection.

10.7 St. Charles Parish is an equal opportunity employer. The Bidder is therefore encouraged to utilize minority participation in this contract to the extent possible through the use of small, disadvantaged and women-owned businesses as suppliers or Subcontractors.

ARTICLE 11. BID FORM

11.1 The Louisiana Uniform Public Work Bid Form (Section-SCP-E-00300) is included with the Bidding Documents; additional copies may be obtained from Engineer at twenty cents ($0.20) per page.

11.2 Bid Form shall be completed in ink or by typewriter and must be clear and legible. **All blanks on the Bid Form must be completed or filled out.**

11.3 Bids by corporations must be executed in the corporate name by a corporate officer accompanied by evidence of authority to sign in accordance with the Authority to Execute Contract/Corporate Resolution form (Section-SCP-E-00485).

11.4 Bids by partnerships must be executed in the partnership name and signed by a partner whose title must appear on the form, and the official address of the partnership must be shown on the form.

11.5 All individuals signing the Bid Form must include their signature and their name printed or typed on the form.

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

ARTICLE 12. SUBMISSION OF BIDS

12.1 Bids shall be submitted at or before the time and at the place indicated in the Advertisement for Bids (Section-SCP-E-00010) and shall be submitted in a sealed, opaque, envelope. Any bids received after the stated time will not be accepted under any circumstances. Any uncertainty regarding the time a bid is

received will be resolved against the Bidder. The envelope shall be marked on the exterior with following:

1) Name and address of the Bidder;
2) Bidder's Louisiana Contractor's License number.
3) St. Charles Parish Project Number;
4) St. Charles Parish Project Title;

The envelope shall contain the Bid Security and other required documents. If the bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "SEALED BID ENVELOPE ENCLOSED" on the face thereof.

12.2 Bid Proposal: Bids shall be received from Bidders only on the Bid Form in the Bidding Documents which are issued. A single bid shall be submitted for all portions of the Contract Work.

ARTICLE 13. MODIFICATION AND WITHDRAWAL OF BIDS

13.1 Bids may be modified or withdrawn by an appropriate document duly executed and delivered to the place where bids are to be submitted at any time prior to the deadline for submitting bids. A request for withdrawal or a modification must be in writing and signed by a person duly authorized to do so; and, in case signed by a deputy or subordinate, the principal's proper written authority to such deputy or subordinate must accompany the request for withdrawal or modifications. Withdrawal of a bid will not prejudice the rights of a Bidder to submit a new bid prior to the bid date and time.

13.2 If, within forty-eight (48) hours after the bid opening, exclusive of Saturdays, Sundays, and legal holidays, any Bidder files a duly signed, and sworn written notice with Owner to the satisfaction of Owner that there was a patently obvious mechanical, clerical, or mathematical error in its bid, that Bidder may withdraw its bid in accordance with La R.S. 38:2214(C). The bid security will be returned as provided by Louisiana Revised Statutes. Thereafter, the Bidder will be disqualified from future bidding on this Contract.

ARTICLE 14. OPENING OF BIDS

14.1 Bids will be opened publicly.

14.2 Bids will be read aloud, and an abstract of the amount of the Base Bids will be made available after the opening of Bids.

ARTICLE 15. BIDS TO REMAIN OPEN

15.1 Bids shall remain open for forty five (45) calendar days after the day of the Bid opening. However, the Owner may, at its sole discretion, release any Bid and return the Bid Security prior to that date.

15.2 Extensions of time when bids shall remain open beyond the forty-five (45) day period may be made only by mutual agreement in writing between the Owner and the apparent Lowest Responsible Bidder. Time may be extended for one or more extension of thirty (30) days. La. R.S. 38:2215(A).

ARTICLE 16. AWARD OF CONTRACT

16.1 For reasons of just cause, as provided by La. R.S. 38:2214(A) and (B), the Owner reserves the right to reject any and all bids, to waive any informalities allowable by statute, and to disregard all nonconforming, nonresponsive, unbalanced or conditional bids. Bids which are unsigned or are not accompanied by the required Bid Security shall be irrevocably rejected. When one or more bids are rejected, the reason therefore shall be given. Bids may be considered irregular and subject to rejection if they show serious omission, unauthorized alteration of form, unauthorized alternate bids, incomplete or unbalanced unit prices, or irregularities of any kind. Also, Owner reserves the right to 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, whether because the bid is not responsive or the Bidder is either unqualified, of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by Owner. In reading the bid, discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

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

16.3 Owner will also consider the qualifications and experience of Subcontractors, suppliers, and other persons and organizations proposed for those portions of the Work whose identity must be submitted as provided in Article 10.1 of these Supplemental Instructions to Bidders.

16.4 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

16.5 If the contract is to be awarded, it will be awarded to the lowest responsible, Bidder. Alternates, if accepted, shall be accepted in the order in which they are

listed in the bid form. Determination of the low Bidder shall be on the basis of the sum of the base bid and any alternates accepted. However, the Owner shall reserve the right to accept alternates in any order which does not affect determination of the successful Lowest Responsible Bidder.

16.6 If this contract should involve financial assistance with funds from other agencies, the Owner shall defer to the regulations of that agency concerning the determination of the Bidder to be awarded this Contract.

ARTICLE 17. QUALIFICATIONS SUBMITTALS

17.1 It is the intention of the Owner to award this contract to a Bidder competent to perform and complete the Work in a satisfactory manner and who proposed to employ Subcontractors, if any, competent to perform their portion of the Work in a satisfactory manner. Accordingly the Bidder shall fully complete and submit as a required part of his bid the following:

1) Louisiana Uniform Public Work Bid Form (Section-SCP-E-00300);

2) Bid Security or Bid Bond (Section-SCP-E-00410). See La. R.S. 38:2212 (B)(2);

3) Corporate Resolution Authorizing Signing of Bid (Section-SCP-E-00485) La. R.S. 38:2212 (B)(2) or such documents that comply with La. R.S. 38:2212 (B)(5).

The following documents will be required within ten (10) days of bid opening from the apparent Low Bidder. Failure to provide these documents shall constitute a non-responsive bid and therefore be rejected.

1) Employment Status Verification Affidavit (Section-SCP-E-00475). See La. R.S. 38:2212 (B)(3)(a);

2) Non Collusion and Non Solicitation Affidavit (Section-SCP-E-00480). See La. R.S. 38:2224;

3) Attestation Clause (Section-SCP-E-00470) See La. R.S. 38:2227;

17.2 The Owner shall consider the Bidder’s qualifications, Subcontractors, and suppliers in evaluating the Bidder's bid and shall have the right to reject any Bidder because of information submitted, not submitted, or fraudulently submitted.

17.3 The following are required to be submitted within twelve (12) days exclusive of Saturdays, Sundays and legal holidays of the Notice of Intent to Award, as

specified in Section-SCP-E-00810:

a) Contract Between Owner and Contractor (Section-SCP-E-00500);

b) Performance Bond (Section-SCP-E-00611);

c) Payment Bond (Section-SCP-00610);

d) Certificates of Insurance naming the Owner as an additional insured on all general liability policies and the standard cancellation clause must read as follows:

"Should any of the above described policies be canceled or changed by restricted amendment before the expiration date thereof, the issuing Company will give thirty (30) days written notice by registered mail, return receipt requested, to the below named certificate holder";

e) Request to Sublet (Section-SCP-E-00816)

f) Any and all other documents requested.

17.4 The Schedule of Suppliers (Section-SCP-E-00450) shall be completed even though the equipment may be furnished by a Subcontractor, and the requirements shall be as binding as if furnished by the Successful Bidder.

ARTICLE 18. TAXES

18.1 To the fullest extent allowed by law, purchases for this project shall be exempt from state sales and use tax according to LA R.S. 47:305.7 et cet. It shall be the sole responsibility of the Contractor to meet all requirements of this statute. Otherwise, the Contractor shall be solely responsible for any and all applicable sales, consumer, use and other similar taxes required by law. The Contractor/Bidder is responsible for reviewing the pertinent State Statutes involving the sales tax and complying with all requirements. The Owner reserves the right to declare its tax status after award of the bid.

ARTICLE 19. RELATED WORK UNDER SEPARATE CONTRACTS

19.1 The Bidder's attention may be directed to the fact that the Work to be done under this Contract may be only part of a project consisting of improvements under several different contracts, that contracts may be let for the other portions of the Project, and that the success of the Project may be dependent upon the completion of the Work under this Contract and the Work to be done by others.

ARTICLE 20. SIGNING OF CONTRACTS (or AGREEMENT)

20.1 When Owner gives a Notice of Award (Section-SCP-E-00810) to the Successful Lowest Responsible Bidder, it may be accompanied by the required number of unsigned counterparts of the Contract (or Agreement) and other written Contract Documents with stipulated delivery time. Failure to comply with these conditions within the time specified may entitle Owner to consider the Successful Lowest Responsible Bidder's Bid abandoned, to annul this Notice of Award and to declare the Successful Lowest Responsible Bidder's Bid Security forfeited.

20.2 Within sixty (60) days after compliance of the Notice of Award conditions (see Section-SCP-E-00810) the Owner will return to the Successful Lowest Responsible Bidder one fully signed counterpart of the Contract Documents.

ARTICLE 21. QUALIFICATIONS OF SURETY COMPANIES:

21.1 In order to be acceptable to the Owner, a surety company issuing Performance and Payment bonds, called for in these Specifications, shall meet and comply with the following minimum standards:

a) Any surety bond written for a public works project shall be written by a surety or insurance company that is licensed to do business in the state of Louisiana, as required by La. R.S. 38:2219(c).

b) Surety bond shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent (10%) of policyholder's surplus as shown in the A.M. Best's Key Rating Guide, as required by La. R.S. 38:2219(b).

c) No surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U.S. Department of the Treasury Financial Management Service list or by a Louisiana domiciled insurance company with an A- rating by A.M. Best up to a limit of ten percent (10%) of policyholder's surplus as shown by A.M. Best; companies authorized by the Paragraph who are not on the treasury list shall not write a bond when the penalty fifteen percent (15%) of its capital and surplus, such capital and surplus being the amount by which the company's assets exceed its liabilities as reflected by the most recent financial statements filed by the company with the Department of Insurance.

d) The life of the bonds shall extend twelve (12) months beyond the date of final acceptance for warranty purposes and shall contain a waiver of alteration to the terms of the Contract, extensions of time and/or forbearance on the part of the Owner.

ARTICLE 22. REQUIRED DISCLOSURE

22.1 Under the requirements of La.R.S.38:2227, the Successful Lowest Responsible shall disclose in writing all material facts pertaining to any felony conviction five (5) years in Louisiana or any other state or the United States obtained against the following:

a) Bidder;

b) Any business entity related to or affiliated with Bidder, or

c) Any present or former executive employee, officer, director, stockholder, partner, or owner of Bidder or of any such related or affiliated entity.

This disclosure shall not apply to any person or entity which is only a stockholder, which person or entity owns ten percent (10%) or less of the outstanding shares of the Bidder whose stock is publicly owned and traded.

22.2 At its sole discretion the Owner may reject any Bidder the Owner finds to lack, or whose present or former executive employees, officers, directors, stockholders, partners, or owners are found by the Owner to lack, honesty, integrity, or moral responsibility. The discretion of the Owner may be exercised based on the disclosure required herein. By submitting a Bid, Bidder recognizes and accepts that the Owner may reject the Bid based upon the exercise of its sole discretion, and Bidder waives any claim it might have for damages or other relief resulting from the rejection of its bid based on these grounds.

ARTICLE 23. PROTESTS

Owner is responsible for resolution of protests of contract award, claims, disputes, alleged patent infringements, alleged license fees, and other related procurement matters in accordance with sound business judgment and good administrative practice. The following procedures will be used for this purpose:

23.1 Any party with a direct financial interest adversely affected by Owner's procurement decision shall file a protest under this Article or be barred further relief.

23.2 A protest must (a) be in writing (oral protests shall not be permitted); (b) adequately state the basis of the protest and the relief requested; and (c) be received by Owner within seven (7) days from the date the basis of the protest was, or should have been, known.

23.3 Owner shall take action on protests within forty-five (45) days of the receipt thereof. Owner may defer the protested procurement upon receipt of a procedurally adequate protest, provided that, in any event, award of a contract or subcontract or procurement of a sub-item may be permitted, at the Owner's sole discretion, where it will not materially affect resolution of the protest.

23.4 A protest shall be limited to (a) issues arising from the procurement provisions of the Contract and (b) state or local law. No protest may be filed with respect to basic project design.

23.5 The Owner's Attorney will establish procedures for resolution of protests. The Owner will rely for resolution of the protest, on decisions issued under Louisiana law, Federal courts, the U.S. Comptroller General, or other Federal agencies with extensive procurement expertise if Louisiana law is not clearly established.

ARTICLE 24. OSHA/REGULATORY REQUIREMENTS

24.1 Successful Lowest Responsible Bidder shall comply with OSHA and all applicable regulatory requirements governing the Project.

ARTICLE 25. COMPLIANCE WITH LA REVISED STATUTE 38:2216.1 AND 39:1602.2

25.1 In accordance with La R.S. 38:2216.1 and 39:1602.2, Contractor agrees that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association. Further, Contractor agrees that it will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.

END OF SECTION

SECTION 00200

INFORMATION AVAILABLE TO BIDDERS

1. The Engineer has relied upon the following reports by Enter Engineer Company. Interested Bidders will be required to sign a release form at the office of the Engineer prior to reviewing and/or obtaining the report stating that it is understood the report is for general information purposes only. Hard Copies of the report will be available at reproduction cost, and an Electronic version of the report (PDF) is available at free of cost. The geotechnical report is also available in PDF format on the central bidding website.

    a. Geotechnical exploration dated **N/A**.
    b. Supplemental Geotechnical Services **N/A**.

2. Utilities

    Contractor shall comply with all relevant parts of Louisiana Underground Utilities and Facilities Damage Prevention Law, Title 40, Part VII, Chapter 8. (La. R.S. 40:1749:11 through 40:1749.25) (Louisiana One Call).

    Existing utilities have been shown on the Drawings insofar as information is reasonably available; however, it will be the Contractor's responsibility to preserve all existing utilities whether shown on the Plans or not. If utility conflicts are encountered by the Contractor during construction, he shall give sufficient notice in writing to their owners so that they can make the necessary adjustments. Damage to any utilities which, in the opinion of the Owner, is caused by carelessness on the part of the Contractor shall be repaired at the Contractor's expense. Any delays ensuing from this damage will be considered as inexcusable.

END OF SECTION

SECTION 00300

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: St. Charles Parish
15045 River Road
Hahnville, Louisiana 70057
(Owner to provide name and address of owner)

BID FOR: **Dog Park**
Parish Project No. **RECBP219**
(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: **Civil & Sports Design Engineering, LLC** and dated **March 16, 2026.**
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

_____ Dollars ($ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

_____ Dollars ($ _____)

Alternate No. 2 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

_____ Dollars ($ _____)

Alternate No. 3 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

_____ Dollars ($_____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

_____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** If someone other than a corporate officer signs for the Bidder/Contractor, a copy of a corporate resolution or other signature authorization shall be required for submission of bid. Failure to include a copy of the appropriate signature authorization, if required, may result in the rejection of the bid unless bidder has complied with La. R.S. 38:2212(B)5 et seq.

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA RS 38:2218.A is attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO: St. Charles Parish
15045 River Road
Hahnville, Louisiana 70057
(Owner to provide name and address of owner)

BID FOR: **Dog Park**
Parish Project No. **RECBP219**
(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.# ___			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

Wording for "DESCRIPTION" is to be provided by the Owner.
All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TITLE 34 – GOVERNMENT CONTRACTS, PROCUREMENT AND PROPERTY CONTROL

Louisiana Administrative Code, December 2013, pages 64-67

Chapter 3. Louisiana Uniform Public Work Bid Form

§301. Name

A. The name of this document shall be the "Louisiana Uniform Public Work Bid Form" also referred to hereinafter as "Bid Form."

AUTHORITY NOTE: Promulgated in accordance with R.S. 38:2212.
HISTORICAL NOTE: Promulgated by the Office of the Governor, Division of Administration, Office of Facility Planning and Control, LR 35:1521 (August 2009).

§303. Authority

A. This form is prepared and issued in accordance with Acts 726 and 727 of the 2008 Regular Legislative Session.

AUTHORITY NOTE: Promulgated in accordance with R.S. 38:2212.
HISTORICAL NOTE: Promulgated by the Office of the Governor, Division of Administration, Office of Facility Planning and Control, LR 35:1521 (August 2009).

§305. Purpose

A. The purpose of this rule shall be to provide for the more effective and efficient letting of public works contracts and to establish a uniform standardized bid form to facilitate this.

AUTHORITY NOTE: Promulgated in accordance with R.S. 38:2212.
HISTORICAL NOTE: Promulgated by the Office of the Governor, Division of Administration, Office of Facility Planning and Control, LR 35:1521 (August 2009).

§307. Applicability

A. This rule shall apply to all state agencies and political subdivisions. The bid form shall require only the information necessary to determine the lowest bidder. With the exception of unit prices, all items on the Louisiana Uniform Public Works bid form shall be included for public works projects. No other information may be required from the bidder. Other documentation required shall be furnished by the low bidder at a later date, in accordance with the bidding documents.

AUTHORITY NOTE: Promulgated in accordance with R.S. 38:2212.
HISTORICAL NOTE: Promulgated by the Office of the Governor, Division of Administration, Office of Facility Planning and Control, LR 35:1521 (August 2009).

§309. Definitions

A. For the purposes of the Louisiana Uniform Public Works bid form the following terms shall have the stated meanings.

Alternate—a specified item of construction that is set apart by a separate sum. An alternate may or may not be incorporated into the contract sum at the discretion of the owner at the time of contract award.

Base Bid—the amount of money stated in the bid as the sum for which the bidder offers to perform the work described in the bidding documents, prior to the adjustments for alternate bids but including any unit prices.

Bid—a complete signed proposal to perform work or a designated portion for a stipulated sum. A bid is submitted in accordance with the bidding documents, is evaluated on price alone and is not subject to qualification.

Bidder—an entity or person who submits a bid for a prime contract with the owner. A bidder is not a contractor on a specific project until a contract is signed between the bidder and the owner.

Bid Form—a form provided to the bidder on which to submit his bid.

Bid Security—a bid bond or deposit submitted with a bid to guarantee to the owner that the bidder, if awarded the contract, will execute the contract within a specified period of time and will furnish any bonds or other requirements of the bidding documents.

Bidding Documents—documents usually including advertisement, bid notice or invitation to bidders, instructions to bidders, bid form, form of contract, forms of bonds, conditions of contract, drawings, specifications addenda, special provisions, and all other written instruments prepared by or on behalf of a public entity for use by prospective bidders on a public contract.

Owner—the public entity issuing the bid.

Public Entity—means and includes the state of Louisiana, or any agency, board, commission, department, or public corporation of the state, created by the constitution or statute or pursuant thereto, or any political subdivision of the state, including but not limited to any political subdivision as defined in Article VI Section 44 of the Constitution of Louisiana, and any public housing authority, public school board, or any public officer whether or not an officer of a public corporation or political subdivision. "Public entity" shall not include a public body or officer where the particular transaction of the public body or officer is governed by the provisions of the model procurement code.

Public Work—the erection, construction, alteration, improvement, or repair of any public facility or immovable property owned, used, or leased by a public entity.

Unit Price—the amount stated in a project bid representing the price per unit of materials and/or services.

AUTHORITY NOTE: Promulgated in accordance with R.S. 38:2212.
HISTORICAL NOTE: Promulgated by the Office of the Governor, Division of Administration, Office of Facility Planning and Control, LR 35:1521 (August 2009).

§311. Alternates

A. Provide space for, give descriptive title to and arrange for alternates in the order of priority. A maximum of three alternates are allowed by state law.

AUTHORITY NOTE: Promulgated in accordance with R.S. 38:2212.
HISTORICAL NOTE: Promulgated by the Office of the Governor, Division of Administration, Office of Facility Planning and Control, LR 35:1522 (August 2009).

SECTION 00410

BID BOND
FOR

St. Charles Parish, LA - _____

Date: _____

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____, as Principal, and _____, as Surety, are held and firmly bound unto the _____ (Obligee), in the full and just sum of five (5%) percent of the total amount of this bid, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater that the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

St. Charles Parish, LA – **Dog Park** SCP Project No. – **RECBP219**

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

_____	_____
PRINCIPAL (BIDDER)	SURETY
BY: _____	BY: _____
AUTHORIZED OFFICER-OWNER-PARTNER	AGENT OR ATTORNEY-IN-FACT (SEAL)

END OF SECTION

SECTION 00450

SCHEDULE OF SUPPLIERS

The Contract Documents are based upon the equipment or materials available from one or more Manufacturers or Suppliers as identified in the Specifications. Provisions are made in the Contract Documents for alternative Manufacturers or Suppliers whose equipment or materials may be deemed equivalent in characteristics, performance and quality.

DOG PARK
PROJECT NO. RECBP219

BASE BID

Bidder proposes to furnish equipment or materials from the Manufacturer or Supplier for each specification item:

ITEM NO.	SPECIFICATION ITEM	EQUIPMENT ITEM OR MATERIAL	MANUFACTURER OR SUPPLIER
1			
2			
5			
6			
7			

ITEM NO.	SPECIFICATION ITEM	EQUIPMENT ITEM OR MATERIAL	MANUFACTURER OR SUPPLIER
8			
9			
10			

Notes

(1) After receipt of bids, the Contractor may not substitute any Manufacturer or Supplier listed above except as permitted under the Contract Documents. Approval of a Supplier by the Architect and Owner shall not waive the requirement for the products furnished by the Manufacturer or Supplier to meet all requirements of the Specifications.

(2) Similar equipment of the same kind, type or classifications and accessories furnished for various specific equipment shall be the standard product of the same manufacturer and shall be in conformance with all applicable Contract Documents.

END OF SECTION

SECTION 00470

ATTESTATION CLAUSE (PAST CRIMINAL CONVICTIONS OF BIDDERS) AS REQUIRED BY La.R.S. 38:2227

Dog Park
NAME OF PROJECT

RECBP219
PROJECT NUMBER

DATE OF BID

Appearer, as a Bidder on the above-entitled Public Works Project, does hereby attest that:

A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

a) Public bribery (La.R.S.14:118)
b) Corrupt influencing(La.R.S.14:120)
c) Extortion (La.R.S.14:66)
d) Money laundering (La.R.S.14:23)

B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

a) Theft (La.R.S 14:67)
b) Identity Theft (La.R.S 14:67.16)
c) Theft of a business record (La.R.S 14:67.20)
d) False accounting (La.R.S 14:70)
e) Issuing worthless checks (La.R.S 14:71)
f) Bank fraud (La.R.S14:71.1)
g) Forgery (La.R.S 14:72)
h) Contractors; misapplication of payments (La.R.S 14:202)
i) Malfeasance in office (La.R.S 14:134)

Name of Bidder

Name of Authorized Signatory of Bidder

Date

Title of Authorized Signatory of Bidder

Signature of Authorized Signatory of Bidder

SECTION 00475

EMPLOYMENT STATUS VERIFICATION AFFIDAVIT

STATE OF _____ **PARISH/COUNTY OF** _____

BEFORE ME, the undersigned authority, personally came and appeared, _____, (Affiant) who after being duly sworn, deposed and said that he/she is the fully authorized_____ of _____ (Entity), the party who submitted a bid to Project No. **RECBP219** to St. Charles Parish.

Affiant further said:

(1) Affiant is registered and participates in a status verification system to verify that all employees in the State of Louisiana are legal citizens of the United States or are legal aliens.

(2) Affiant shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the State of Louisiana.

(3) Affiant shall require all subcontractors to submit to the Affiant a sworn affidavit verifying compliance with statements (l) and (2).

Signature of Affiant _____

SWORN TO AND SUBSCRIBED BEFORE ME ON THIS ____ DAY OF_____, 20____

_____
NOTARY PUBLIC

My commission expires _____

SEAL

SECTION 00480

NON-COLLUSIVE AND NON-SOLICITATION AFFIDAVIT

STATE OF LOUISIANA

PARISH OF _____

_____, being first duly sworn, deposes and says that:

(1) He is the _____ of
(Owner, Partner, Officer, Representative or, Agent)

_____, the Bidder, and that
(Name of Bidder)

the Bidder has submitted the accompanying Bid for the construction of the Contract, Project No. **RECBP219** of the Parish of St. Charles, Louisiana;

(2) He is fully informed respecting the preparation and contents of the Bid and of all pertinent circumstances respecting the Bid;

(3) The Bid is genuine and is not a collusive or sham Bid;

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, have in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm, or person to submit a collusive or sham Bid in connection with the Contract or Work for which the attached Bid has been submitted; or to refrain from bidding in connection with such Work; or have in any manner, directly or indirectly, sought by agreement, collusion, communication, or conference with any Bidder, firm, or person to fix the price or prices in the Bid or the Bid of any other Bidder; or to fix any overhead, profit, or cost elements of the Bid price or the Bid price of any other Bidder; or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the Owner, or any person interested in the proposed Work;

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any other of its agents, representatives, owners, employees, or parties in interest, including this affidavit;

(6) That he has employed no one person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he is to receive payment, other than persons regularly employed by him whose services in connection with the construction of the public building or project or in securing the public contract were in the regular course of their duties for him; and that no part of the contract price to be received by him was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by him whose services in connection with the construction of the public building or project were in the regular course of their duties for him;

(7) This affidavit is executed in compliance with the provisions of La.R.S.38:2224.

Bidder _____

By _____

Title _____

Subscribed and sworn to before me

this ____ day of _____, 20____ at _____, Louisiana

My commission expires _____

SEAL

END OF SECTION

SECTION 00485

AUTHORITY TO EXECUTE CONTRACT

CORPORATE RESOLUTION

A meeting of the Board of Directors of _____ a corporation organized under the laws of the State of _____ and domiciled in _____ was held this _____ day of_____, 20____ and was attended by a quorum of the members of the Board of Directors.

The following resolution was offered, duly seconded and after discussion was unanimously adopted by said quorum:

BE IT RESOLVED, that _____ is hereby authorized to submit proposals and execute agreements on behalf of this corporation with the Parish of St Charles.

BE IT FURTHER RESOLVED, that said authorization and appointment shall remain in full force and effect, unless revoked by resolution of this Board of Directors and that said revocation will not take effect until St. Charles Parish, has been furnished a copy of said resolution, duly certified.

I, _____, hereby certify that I am the Secretary of _____ a corporation created under the laws of the State of_____ domiciled in _____; that the foregoing is a true and exact copy of a resolution adopted by a quorum of the Board of Directors of said corporation at a meeting legally called and held on the _____ day of _____, 20___, as said resolution appears of record in the Official Minutes of the Board of Directors in my possession.

This _____ day of _____, 20___.

_____

SECRETARY

END OF SECTION

SECTION 00500

CONTRACT

This agreement entered into this _____ day of _____, 20 _____, by _____, hereinafter called the "Contractor", whose business address is _____, and the St. Charles Parish, hereinafter called the "Owner".

Owner and Contractor, in consideration of premises and the mutual covenants; consideration and agreement herein contained, agree as follows:

ARTICLE 1

STATEMENT OF WORK

1.01 Contractor shall furnish all labor and materials and perform the work required to build, construct and complete in a thorough and workmanlike manner in connection with the following:

Project Name: **DOG PARK** Project Number: **RECBP219**

The abovementioned work shall be completed in strict accordance with Contract Documents prepared by: **Civil & Sports Design Engineering, LLC.**

1.02 It is recognized by the parties herein that said Contract Documents including by way of example and not of limitation, the Drawings and Specifications dated **March 16, 2026**, Addenda number(s) _____, the Instruction to Bidders, Supplemental Instructions to Bidders, Louisiana Uniform Public Works Bid Form, General Conditions, Supplementary Conditions (if applicable), any Addenda thereto, impose duties and obligations upon the parties herein, and said parties thereby agree that they shall be bound by said duties and obligations. For these purposes, all of the provisions contained in the aforementioned Contract Documents are incorporated herein by reference with the same force and effect as though said Contract Documents were herein set out in full.

1.03 The Work is generally described as follows: **New Dog Park including restroom, filling, grading, and pavement.**

ARTICLE 2

ENGINEER

2.01 The Project has been designed by **Civil & Sports Design Engineering, LLC** who is hereinafter called "Engineer" and who will assume all duties and responsibilities and have the rights and authority assigned to Engineer in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3

CONTRACT TIME

3.01 The Contractor shall complete the Work under the Contract within **150** calendar days from the date stated in the Notice to Proceed.

ARTICLE 4

LIQUIDATED DAMAGES

4.01 Owner and Contractor recognize that the Owner will suffer direct financial loss if Work is not completed within the Contract Time specified plus any extensions thereof allowed in accordance with these General Conditions of this Contract, and therefore, time is of the essence. They also recognize the delays, expense and difficulties involved in proving in a legal preceding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Contractor and Surety agree to forfeit and pay Owner **One Thousand dollars ($1,000.00)** per day as Liquidated Damages for delay (but not as a penalty). Such Liquidated Damages will be assessed for each calendar day that expires after the Contract Time. This amount represents a reasonable estimate of Owner's expenses for extended delays and the costs associated therein. This provision shall be effective between the parties ipso facto and without demand or putting in default, it being specifically agreed that the Contractor by his mere failure to complete the work on or before the date specified shall be deemed in default.

ARTICLE 5

CONTRACT PRICE

5.01 The Owner will pay and the Contractor will accept in full consideration for the performance of the Contract the sum of:

a) ($_____) _____Dollars based on unit prices specified within this contract document. Contract price is firm and subject only to modification by written Change Order agreed to and signed by both parties and the Engineer and approved by the St. Charles Parish Council.

ARTICLE 6

PAYMENT PROCEDURES

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

6.02 Progress Payments. Progress payments will be based upon estimated quantities of contract unit price items or upon estimated percentages of completion of the schedule of lump sum values of labor and materials incorporated into the Work or suitably stored, on the last day of each month or other mutually agreed regular monthly date ending the progress payment period, less retainage.

6.03 Application for Payment Form. The form of the Application for Payment must be suitable to the Owner. The Owner reserves the right to withhold payment until the form of Application for Payment is deemed acceptable by the Owner.

6.04 Retainage. Per Paragraph 15.01.D retainage shall be withheld and payments will be made by the Owner in the payment amount of:

a) Ninety percent (90%) of the approved payment applications for projects with contract of less than $500,000.00; or

b) Ninety-five percent (95%) of the approved payment applications for projects with contract prices of $500,000.01 or greater.

6.05 The normal retainage shall not be due the Contractor until after Substantial Completion and expiration of the forty-five (45) day lien period and submission to the Engineer of a clear lien certificate and invoice for retainage.

6.06 Final Payment. Upon the final completion of all Work, the Contractor may request a final inspection and may make a final Application for Payment as provided by Paragraph 15.06 of the General Conditions.

6.07 Final Acceptance. When Final Acceptance is granted by the Owner, the Owner shall file the certificate with the Recorder of Mortgages for St. Charles Parish.

6.08 At the expiration of the lien period the Contractor shall obtain a certificate from the Recorder of Mortgages of the Parish of St. Charles that the Contract is clear of any liens or privileges, and said certificate shall be presented to the Owner for final payment and release of retainage, less any such sums as may be lawfully withheld under the Contract.

6.09 Claims. Pursuant to La. R.S. 38:2242, when the Owner receives any claim of nonpayment arising out of the Contract, the Owner shall deduct such claim from the Contract Sum. The Contractor, or any interested party, may deposit security, in accordance with La. R.S. 38:2242.2, guaranteeing payment of the claim with the Recorder of Mortgages for St. Charles Parish. When the Owner receives original proof of such guarantee from the Recorder of Mortgages, the claim deduction will be added back to the Contract Sum.

ARTICLE 7

CONTRACTOR'S REPRESENTATIONS

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

7.02 Contractor has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or finishing of the Work.

7.03 Contractor has studied carefully all reports of explorations and tests of subsurface physical conditions and drawings of physical conditions which are identified in the Information Available To Bidders and as provided in the General Conditions.

7.04 Contractor has obtained and carefully studied (or assumed responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in Paragraph 2 above) which pertain to the subsurface or physical conditions at or contiguous to the site or which otherwise may affect the cost, progress, performance or furnishing of the Work as Contractor considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents. In exercising its responsibility with respect to subsurface conditions and physical conditions at the site, Contractor has or will obtain or perform at no additional cost to the Owner such additional examinations, investigations, explorations, tests, reports, studies, or similar information or data as may be required by Contractor for such purposes.

ARTICLE 8

CONTRACT DOCUMENTS

8.01 The following Contract Documents, which comprise the entire Agreement between Owner and Contractor, are all hereby made a part of that Agreement to the same extent as if incorporated herein in full:

a) Contract (Section 00500)

b) Performance Bond (Section 00611)

c) Payment Bond (Section 00610)

d) Insurance Certificates

e) Advertisement for Bids (Section 00010)

f) Louisiana Uniform Public Works Bid Form (Section 00300)

g) Addenda (Numbers _____ to _____ inclusive)

h) Contract documents bearing the general title "**Dog Park**" dated **March 16, 2026.**

i) Drawings, consisting of a cover sheet dated **March 16, 2026**, and the sheets listed on Drawing **C1.0**; each sheet bearing the following general title: **Dog Park**.

j) General Conditions (Section 00700)

k) Supplementary Conditions (if applicable for compliance purposes) (Section 0800)

There are no Contract Documents other than those listed above in this Article 8. The Contract may only be amended, modified or supplemented as provided for in the General Conditions.

ARTICLE 9

MISCELLANEOUS

9.01 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and, unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents. Notwithstanding the foregoing, the Owner may assign this contract to the State of Louisiana or any political subdivision, municipality, special district or authority thereof without Contractor's consent and without recourse.

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

9.03 It is hereby agreed and understood by the parties hereto that any and all disputes that may result in litigation shall be litigated in the 29th Judicial District Court for the Parish of St. Charles.

9.04 In accordance with La R.S. 38:2216.1 and 39:1602.2, Contractor agrees that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association. Further, Contractor agrees that it will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement effective as of the date first written above. All portions of the Contract Documents have been signed or identified by Owner and Contractor or by Engineer on their behalf.

OWNER: Parish of St. Charles	CONTRACTOR:
By:_____	By:_____
Title:_____	Title:_____
ATTEST:	ATTEST:
By:_____	By:_____
Title:_____	Title:_____

END OF SECTION

SECTION 00610

PAYMENT BOND

_____

_____

as Principal, and_____,

a surety company or companies authorized to do business in Louisiana, as Surety, are bound, in solido, unto_____

and unto all subcontractors, workmen and furnishers of materials and equipment, jointly in the sum of _____DOLLARS ($_____),

payable in lawful money of the United States, and to this bond do obligate their heirs, successors and assigns. In the case of cosureties, the cosureties assume an obligation in the sum of

_____DOLLARS ($_____),

for_____ and

_____DOLLARS ($_____),

for_____

The consideration of this bond is such, that if the Principal shall perform this contract, made and entered into on the

_____ day of _____, 20_____,

to construct Parish Project No. RECBP219 State Project No (If Applicable) N/A

entitled Dog Park, Parish_____, consisting of

_____ according to the stipulations in said contract attached hereto and made a part hereof, pay all sums due on materials and supplies used and for wages earned by workmen employed on the work; this obligation shall be void; otherwise to remain in effect.

It is agreed by the parties that this bond is given in accordance with Louisiana Revised Statutes of 1950, Title 38, Chapter 10.

In faith whereof, we have subscribed this obligation at _____, Louisiana

Witness our hands and seals, this _____ day of _____, 20_____,

Witness

_____
Principal

_____ By _____(Seal)

_____ _____
Type or Printed Name

_____
First Surety

_____ By _____(Seal)
Attorney-in-Fact

_____ _____
Type or Printed Name

_____
Second Surety

_____ By _____(Seal)
Attorney-in-Fact

_____ _____
Type or Printed Name

SECTION 00611

PERFORMANCE BOND

_____

_____

as Principal, and _____,

a surety company or companies authorized to do business in Louisiana, as Surety, are bound, in solido, unto

_____

in the sum of

_____DOLLARS ($_____),

payable in lawful money of the United States, in order to secure the full and faithful performance and timely completion of the project described below according to its plans and specifications, including, but not limited to the payment of stipulated damages as specified in the contract, and to this bond do obligate their heirs, successors and assigns. In the case of cosureties, the cosureties assume an obligation in the sum of

_____DOLLARS ($_____),

for_____ and

_____DOLLARS ($_____),

for_____

The consideration of this bond is such, that if the Principal shall perform this contract, made and entered into

on the_____ day of _____, 20_____,

to construct Parish Project No. RECBP219 State Project No. (if applicable) N/A

entitled Dog Park Parish _____, consisting of

_____

according to the stipulations in said contract attached hereto and made a part hereof, at the time and in the manner and form specified; perform all labor and work; and shall furnish all materials as specified in said contract, and the plans a specifications thereto attached and made a part thereof; this obligation shall be void; otherwise to remain in effect.

It is agreed by the parties that this bond is given in accordance with Louisiana Revised Statutes of 1950, Title 38, Chapter 10.

In faith whereof, we have subscribed this obligation at _____, Louisiana

Witness our hands and seals, this _____ day of _____, 20_____,

Witness

_____
Principal

_____ By _____(Seal)

_____ _____
Type or Printed Name

_____
Surety

_____ By _____(Seal)
Attorney-in-Fact

_____ _____
Type or Printed Name

_____
Second Surety

_____ By _____(Seal)
Attorney-in-Fact

_____ _____
Type or Printed Name

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

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

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

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

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

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner, and after adoption by the Parish Council via ordinance, authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

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

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

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

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

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

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

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

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

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

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

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

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

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

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

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

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

26. *Notice of Award*—The written notice by Owner to the lowest responsible Bidder stating that upon compliance of the conditions listed in the Notice of Award, or listed in the Bidding documents, the Owner, if Owner decides to proceed with the Work, will deliver the Contract Documents for signature. A Notice of Award shall not be construed as a contract, or any other legal obligation between the Owner and Contractor. Until the Contractor receives a Notice to Proceed from the Owner, the Contractor has no right or remedy against the Owner. The time for delivery of the Contract Documents may be extended in compliance with Louisiana law.

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

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

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

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

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

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

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

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

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

36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

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

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

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

40. *Substantial Completion*—The finishing of construction in accordance with the contract documents as modified by any change orders agreed to by the parties to the extent that the public entity can use or occupy the public works or use or occupy the specified area of the public works for the use for which it was intended. The Engineer shall recommend to the Owner whether the project is substantially complete in accordance with the Contract Documents.

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

42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions. Supplementary Conditions may or may not be included in the Contract Documents.

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

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

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

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

47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, recommended by Engineer, and signed by Owner, ordering an addition, deletion, or revision in the Work. A Work Change Directive will not change the Contract Price or Contract Time but is evidence that the parties expect that such Work will be incorporated into a subsequently issued Change Order as to its effect, if any, on the Contract Price or Contract Time.

1.02 *Terminology*

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

B. *Intent of Certain Terms or Adjectives*:

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

C. *Day*:

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

D. *Defective*:

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

a. does not conform to the Contract Documents; or

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

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

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

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

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

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

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

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

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

B. *Evidence of Contractor's Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner and other such documents as required by the Notice of Award (Section 00810), Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Contract Documents), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.0.

C. *Evidence of Owner's Insurance*: If applicable, after receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured the certificates and other evidence of insurance required to be provided by Owner under Article 6.02.

2.02 *Copies of Documents*

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

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

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: at the Pre-Construction Conference Contractor shall submit to Engineer for timely review:

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

2. a preliminary Schedule of Submittals; and

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

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a Pre-Construction Conference will be held and attended by Owner, Contractor, and Engineer after a successful vote by the St. Charles Parish Council and execution of the Contract by St. Charles Parish President.

B. The Pre-Construction Conference will establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

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

2.05 *Initial Acceptance of Schedules*

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

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

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

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

2.06 *Electronic Transmittals*

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

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

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

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

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

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

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to

supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*:

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

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

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

B. *Resolving Discrepancies*:

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

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

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

3.04 *Requirements of the Contract Documents*

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

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

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

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

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

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

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

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

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

4.02 *Starting the Work*

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

4.03 *Reference Points*

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

requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

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

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process.

4.05 *Delays in Contractor's Progress*

A. No payment or allowance of any kind shall be made to the Contractor as compensation for damages because of hindrance or delay for any cause (utility relocations/adjustments by other, traffic related matters, etc.) in the progress of the work, whether such delay the fault of the contractor or not (unless the owner provides written consent for a time extension due to unavoidable circumstances).

4.06 *Delays Caused by Other Contractors*

A. Contractor acknowledges other contractors are working on the same job site. If work of Contractor is delayed for 24 consecutive hours by another Contractor, Owner may grant an extension of time if Contractor properly documents the delay.

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

5.01 *Availability of Lands*

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

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

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

5.02 *Use of Site and Other Areas*

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

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or

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

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

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

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

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

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Contract Documents may identify:

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

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

3. Technical Data contained in such reports and drawings.

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

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

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

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
2. is of such a nature as to require a change in the Drawings or Specifications; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

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

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in

question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Possible Price and Times Adjustments*:

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

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

    b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to a Change Order as provided in this Agreement; and,

    c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

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

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

    c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

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

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

5.05 *Underground Facilities*

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

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

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

    a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

    b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;

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

    d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

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

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

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

E. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

    a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and

d. Contractor gave the notice required in Paragraph 5.05.B.

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

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

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Contract Documents identify:

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

2. Technical Data contained in such reports and drawings.

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

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

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

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

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

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

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

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

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

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

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

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and

charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

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

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplemental Instructions to Bidders (Section 00101) or other specific provisions of the Contract.

B. All bonds shall be written by a surety or insurance company currently on the U.S. Department of Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent (10%) of policyholders' surplus as shown in the A.M. Best's Key Rating Guide. Company must have a registered agent in the State of Louisiana, as provided by La. R.S. 38:2218.

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

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

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

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

6.02 *Insurance—General Provisions*

A. Contractor shall procure and maintain for the duration of the Contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by the Contractor, his agents,

representatives, employees or Subcontractors. The cost of such insurance shall be included in the Contractor's bid.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies currently on the U.S. Department of the Treasury Financial Management Service list of approved insurance companies which is published annually in the Federal Register or a Louisiana domiciled insurance company authorized in the State of Louisiana with an A. M. Best's rating of no less than A-. This rating requirement may be waived for the workers' compensation coverage.

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

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

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

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

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

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

I. All liability and workers compensation insurance policies shall name the Parish of St. Charles as additional insured.

6.03 *Contractor's Insurance*

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

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

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

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

4. Foreign voluntary worker compensation (if applicable).

5. Each occurrence/minimum limit must be $1,000,000.00 when work is to be over water and involve maritime exposure.

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

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

2. claims for damages insured by reasonably available personal injury liability coverage.

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

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

1. Products and completed operations coverage:

   a. Such insurance shall be maintained for three years after final payment.

   b. Contractor shall furnish Owner other additional insured (as identified in the Contract Documents) evidence of continuation of such insurance at final payment and three years thereafter.

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

3. Broad form property damage coverage.

4. Severability of interest.

5. Underground, explosion, and collapse coverage.

6. Use of Contractors or Subcontractors.

7. Premises-Operation.

8. Personal injury coverage.

9. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent. **In any event, all insurance policies shall name the Parish of St. Charles, as well as its employees and elected officials, as additional insured.**

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

11. Policy for Commercial General Liability:

    a. For each occurrence/minimum limit:

       1) Projects under $500,000.00- $1,000,000.00;

       2) Projects $500,000.01-$1,000,000.00- $3,000,000.00;

3) Projects $1,000,000.01 and over- $5,000,000.00.

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

1. Policy must have a combined single limit of $2,000,000.00 or more.

E. *Owner's Protective Liability:* Owner's Protective Liability insurance shall be furnished by the Contractor naming the Owner as Insured.

1. CSL Each Occurrence/minimum limit:

a. Projects under $500,000.00- $1,000,000.00;

b. Projects $500,000.01 to $1,000,000.00- $3,000,000.00;

c. Projects $1,000,000.01 and above- $3,000,000.00.

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

G. *Contractor's pollution liability and environmental insurance*: Insurance in the minimum amount of $1,000,000 per occurrence $2,000,000 aggregate (unless otherwise stated in the Supplemental Conditions) including full contractual liability and third party claims for bodily injury and/or property damage, for all such hazardous waste, pollutants and/or environmental exposures that may be affected by this project stemming from pollution/environmental incidents as a result of Contractor's operations.

If coverage is provided on a claim-made basis, coverage will at least be retroactive to the earlier of the date of this Contract or the commencement of contractor services in relation to the Work and the policy will offer an extended discovery clause of at least three years.

If written either on an occurrence or claims made basis, this coverage will be maintained through the renewal of this insurance to cover a loss arising out of the completed operations of the insurance for a period of at least 2 years after the work is accepted as complete by the property owner or this contract is terminated.

H. *Marine liability/protection indemnity:* Insurance is required for any and all vessel and/or marine operations in the minimum limits of $1,000,000 per occurrence/ $2,000,000 per project general aggregated. The coverage shall include, but is not limited to, the basis coverages found in the Commercial General Liability insurance and coverage for third party liability.

I. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified elsewhere in the Contract Documents, 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 (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

J. *Asbestos Abatement Liability:* is required when the asbestos abatement is included in the Work. The Contractor or Subcontractor who will be doing the asbestos abatement as outlined in this Contract shall obtain and maintain such liability coverage for the asbestos abatement hazard and exposure with minimum limit of $10,000,000 per occurrence for the duration of the Project. The policy shall name the Owner as an additional insured for the project. The policy shall be written on an "Occurrence" form without a “Sunset Clause.” Claims-made coverage is unacceptable. The insurance company shall have an A.M. Best rating of at least A- or better.

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

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

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

1. include at least the specific coverages provided in this Article including but not limited to the interests of Owner, Contractor, Subcontractors, Engineer, and Engineer’s Consultants in the Work, all of whom shall be listed as insured or additional insured parties, shall insure against perils of fire and extended coverage, shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage and such other perils as may be determined in this contract and shall include damages, losses, and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals). If not covered under the "all risk" insurance or otherwise provided in the contract, Contractor shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in an Application for Payment; this list shall not be deemed exhaustive.

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

3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 30 days prior written notice has

been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

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

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

N. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

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

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

6.05 *Property Insurance*

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

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

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

under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. allow for the waiver of the insurer's subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

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

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk

insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

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

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

6.06 *Waiver of Rights*

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

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

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

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

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

members, partners, employees, agents, consultants, or subcontractors of each and any of them.

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

6.07 *Receipt and Application of Property Insurance Proceeds*

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

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

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

6.08 *Coverages*

A. The minimum limits of liability for the insurance as required by the General Conditions shall provide coverage for not less than the following amounts or greater where required by laws and regulations of the State of Louisiana:

B. Workers' Compensation:

1. State: Coverage A Statutory
2. Employer's Liability: Coverage B - $ 250,000 each accident.
3. Waiver of subrogation in favor of Parish of St. Charles is required from Worker's Compensation Insurer.

C. Comprehensive General Liability

1. Bodily Injury and property damage (combined)
   $5,000,000 single limit
   $5,000,000 annual aggregate
2. Property damage liability insurance will provide explosion, collapse and underground coverages where applicable.

D. Comprehensive Automobile Liability:

1. Bodily Injury and property damage (combined)
   $2,000,000 single limit
   $2,000,000 each accident

E. If so directed by the ENGINEER or by the OWNER, CONTRACTOR shall obtain insurance which complies with the requirements of The Flood Disaster Protection Act of 1973 (Public Law 93-234, December 31, 1973). If CONTRACTOR is required to purchase flood insurance, a Change Order will be issued to compensate CONTRACTOR for the costs of the flood insurance. The cost of the flood insurance will not be included in the Bid.

F. All insurance policies shall be acceptable to the Parish of St. Charles. Certificate holder shall be listed as Parish of St. Charles, P. O. Box 302, Hahnville, Louisiana.

6.09 *Asbestos Abatement Liability*

A. Is required when the asbestos abatement is included in the Work. The Contractor or Sub-contractor who will be doing the asbestos abatement as outlined in this Contract shall obtain and maintain such liability coverage for the asbestos abatement hazard and exposure with minimum limits of ten million dollars ($10,000,000.00) per occurrence for the duration of the project. The policy shall name the Owner as an additional insured for the project. The policy shall be written on an "occurrence" form without a sunset clause. Claims-made coverage is unacceptable. The insurance company shall have an A.M. Best rating of at least A-:VI or better.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

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

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

7.02 *Labor; Working Hours*

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

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, as defined as those hours between 7:00 a.m. to 6:00 p.m. Monday through Friday. Contractor shall not perform overtime Work on Monday through Friday, or perform any Work on Saturday, Sunday, or any federally or locally recognized holiday without Owner's written consent, which will not be unreasonably withheld. Contractor may request Owner's consent to perform Work outside of regular working hours upon providing a written request to Owner.

7.03 *Services, Materials, and Equipment*

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

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

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

7.04 *"Or Equals"*

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

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

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

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

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

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

        4) it is not objectionable to Owner.

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

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

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

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

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

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

7.05 *Substitutes*

A. In unusual cases where a closed specification has been justified for prior acceptance by the Owner in conformance with La. R.S. 38:2291 and La. R.S. 38:2292, the naming of that product in the Drawings and Specifications will be followed by wording indicating that no substitution is permitted.

B. Substitute materials or products requests that occur prior to Bid Opening will be governed by the provisions contained in Article 9 of the Supplemental Instructions to Bidders (Section SCP-E-00101).

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

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

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

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

a. shall certify that the proposed substitute item will:

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

2) be similar in substance to that specified, and

3) be suited to the same use as that specified.

b. will state:

1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

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

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

c. will identify:

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

2) available engineering, sales, maintenance, repair, and replacement services.

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

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

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

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

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

7.06 *Concerning Subcontractors, Suppliers, and Others*

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

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

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

D. The Contractor shall furnish at the Pre-Construction Conference, to the Owner and the Engineer, in writing, the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days. No payments to the Contractor shall be made until this information is received.

E. All Subcontractors being assigned a portion of the Work in the amount of fifty-thousand dollars ($50,000) or more must possess a current Louisiana Contractor's license of the proper classification, as provided by La. R.S. 37:2150 et seq.

F. The contractor shall not sublet any portion of the contract, excluding material, without written consent, including work sublet to an authorized Disadvantaged Business Enterprise. If such consent is given, the contractor will be permitted to sublet a portion of the work, but shall perform with the contactor's own organization work amounting to at least 50 percent of the total contract cost. Any items designated in the contract as "Specialty Items" may be performed by subcontract and the cost of such may be deducted from the total contract cost before computing the amount of work required to be performed by the contractor with the contractor's own organization.

G. A subcontractor shall not further subtract to a third party any portion of this authorized work, excluding material, without written consent, including work sublet to an authorized Disadvantaged Business Enterprise.

H. No subcontract shall relieve the contractor of liability under the contract and bonds.

I. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Owner has accepted a proposed Subcontractor, Supplier, or other individual retained by the Contractor to perform any portion of the work (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

J. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

K. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor may be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the

replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

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

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

N. 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.

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

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

Q. 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.

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

S. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

T. Nothing in the Contract Documents:

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

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

7.07 *Patent Fees and Royalties*

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

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

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

7.08 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work. Neither the Contract Time nor the Contract Price will be adjusted due to the Contractor's failure to obtain the necessary permits

7.09 *Taxes*

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

7.10 *Laws and Regulations*

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

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

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

7.11 *Record Documents*

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

7.12 *Safety and Protection*

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

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

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

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

C. Contractor shall comply with all applicable federal, state, and local safety regulations.

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

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to

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

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

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

7.13 *Safety Representative*

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

7.14 *Hazard Communication Programs*

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

7.15 *Emergencies*

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

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements*:

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

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

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

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

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

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

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

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

1. *Shop Drawings*:

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples*:

a. Contractor shall submit the number of Samples required in the Specifications.

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

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

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

D. *Engineer's Review*:

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

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

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

E. *Resubmittal Procedures*:

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

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

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

7.17 *Contractor's General Warranty and Guarantee*

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

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

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

2. normal wear and tear under normal usage.

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

1. observations by Engineer;

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

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

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

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

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

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

8. any correction of defective Work by Owner.

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

7.18 *Indemnification*

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

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

Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

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

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

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

7.19 *Delegation of Professional Design Services*

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

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

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

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

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

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

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

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

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

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

8.02 *Coordination*

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

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. an itemization of the specific matters to be covered by such authority and responsibility; and

3. the extent of such authority and responsibilities.

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

8.03 *Legal Relationships*

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

B. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable

direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

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

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

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

9.04 *Pay When Due*

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

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

A. Owner's duties with respect to providing lands and servitudes/easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

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

9.07 *Change Orders*

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

9.08 *Inspections, Tests, and Approvals*

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

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

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

9.11 *Safety Programs*

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

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

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

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

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means,

methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

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

10.04 *Rejecting Defective Work*

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

10.05 *Shop Drawings, Change Orders and Payments*

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

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

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

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

10.06 *Determinations for Unit Price Work*

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

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

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work.

10.08 *Limitations on Engineer's Authority and Responsibilities*

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

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

not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

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

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

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

10.09 *Compliance with Safety Program*

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

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

11.01 *Amending and Supplementing Contract Documents*

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

1. *Change Orders*:

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

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

c. Change Orders become effective only after signing by the Owner, Contractor, and Engineer, and adoption by the St. Charles Parish Council via ordinance.

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

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

11.02 *Owner-Authorized Changes in the Work*

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

11.03 *Unauthorized Changes in the Work*

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

11.04 *Change of Contract Price*

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

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

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

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 14.05); or

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

11.05 *Change of Contract Times*

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

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

11.06 *Change Proposals*

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

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

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

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

11.07 *Execution of Change Orders*

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

1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

B. All Change Orders shall not be effective until approved at a public hearing before the St. Charles Parish Council.

11.08 *Notification to Surety*

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

ARTICLE 12 – CLAIMS

12.01 *Claims*

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

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

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

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

D. *Mediation*:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

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

E. *Denial of Claim*: If efforts to resolve a Claim are not successful, then the claim is deemed denied.

F. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, then the agreement shall be memorialized in a Change Order subject to final approval by St. Charles Parish Council.

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

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

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

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

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

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

5. Supplemental costs including the following:

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

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

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

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

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

    f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval

of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

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

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

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

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

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

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

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

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

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

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

13.02 *Allowances*

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

B. *Cash Allowances*: Contractor agrees that:

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

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

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

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

13.03 *Unit Price Work*

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

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

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

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

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

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

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

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

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

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

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

B. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests. Notice in writing shall be given to the Engineer in a manner that will allow two (2) full working days for mobilization for all inspectors and testing personnel in order for inspections and tests to take place. Should the Contractor's work not be ready for inspection or testing after notice then the costs of the inspectors, testing personnel, and their equipment mobilized to the site will be borne by the Contractor.

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

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

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

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

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

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

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

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

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

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

14.03 *Defective Work*

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

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

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

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

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

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

14.04 *Acceptance of Defective Work*

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

14.05 *Uncovering Work*

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

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

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

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

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

14.06 *Owner May Stop the Work*

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

14.07 *Owner May Correct Defective Work*

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

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

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

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

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

15.01 *Progress Payments*

A. *Basis for Progress Payments*: Progress Payments will be based upon estimated quantities of contract unit price items or upon estimated percentages of completion of the schedule of lump sum values of labor and materials incorporated into the Work, or if approved in advance by Owner, suitably stored, on the last day of each month or other mutually agreed regular monthly date ending the progress payment period, less retainage.

B. *Application for Payment Form*: The form of the Application for Payment must be acceptable to the Owner. The Owner reserves the right to withhold payment until the form of the Application for Payment is deemed acceptable to the Owner.

C. *Applications for Payments*:

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

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

3. Contractor shall also comply with the following specific requirements:

a. Title to materials stored offsite shall be vested in the Owner, as evidenced by documentation satisfactory in form and substance to the Owner, including, without limitation recorded financing statements, UCC filings, and UCC searches.

b. With each application for payment, the Contractor shall submit to the Owner a written list identifying each location where materials are stored off the Project Site and the value of materials at the location. The Contractor shall procure insurance satisfactory to the Owner for materials stored off the Project Site in an amount not less than the total value thereof.

c. The consent of any Surety shall be obtained to the extent required prior to payment for any materials stored off the Project Site.

d. Representatives of the Owner shall have the right to make inspections of the storage areas at any time.

e. Such materials shall be (1) protected from diversion, destruction, theft and damage to the satisfaction of the Owner; (2) specifically marked for use on the Project; and (3) segregated from other materials at the storage facility.

D. *Retainage*

1. Retainage shall be withheld and payments will be made by the Owner in the payment amount of:

    a. 90% of the approved Application for Payment for projects with a contract price of $500,000.00 or less; or

    b. 95% of the approved Application for Payment for projects with a contract price of $500,000.01 or greater.

2. The normal retainage shall not be due the Contractor until after Substantial Completion and expiration of the forty five (45) day lien period and submission to the Engineer of a clear lien certificate and invoice for retainage.

E. *Review of Applications*:

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

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

    a. the Work has progressed to the point indicated;

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

    d. recommendation of payment by Engineer does not limit or otherwise hinder Owner's right to dispute, or withhold payment if Owner reasonably believes that any of the conditions stated in a, b, or c have not been fulfilled.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

    d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

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

F. *Payment Becomes Due*:

1. Thirty (30) days after presentation of the Application for Payment to Owner with Engineer's written recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

G. *Reductions in Payment by Owner*:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

    a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

    b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

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

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

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

i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;

j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

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

l. there are other items entitling Owner to a set off against the amount recommended.

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

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

15.02 *Contractor's Warranty of Title*

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

15.03 *Substantial Completion*

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

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

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

   i) In addition to any other retainage amounts Engineer shall determine the value of the punch list on a line by line basis. Owner shall be permitted to retain the amount assigned by the punch list until such items are completed. Engineer shall submit the punch list amount with the punch list at the time the Engineer submits the preliminary certificate of Substantial Completion to the Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

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

15.04 *Partial Use or Occupancy*

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

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

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

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

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

15.05 *Final Inspection*

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

15.06 *Final Payment*

A. *Application for Payment*:

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

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

a. all documentation called for in the Contract Documents;

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

c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

d. a list of all disputes that Contractor believes are unsettled; and

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

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

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

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

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

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

E. *Claims:* Pursuant to La. R.S. 38:2242, when the Owner receives any claim of nonpayment arising out of the Contract, the Owner shall deduct such claim from the Contract Sum. The Contractor, or any interested party, may deposit security, in accordance with La. R.S. 38:2242.2, guaranteeing payment of the claim with the Recorder of Mortgages of the Parish of St. Charles. When the Owner receives original proof of such guarantee from the Recorder of Mortgages, the claim deduction will be added back to the Contract Sum.

15.07 *Waiver of Claims*

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

guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.

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

15.08 *Correction Period*

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

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

2. correct such defective Work;

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

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

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

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

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

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

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the

Work on the date so fixed. Contractor may be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

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

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

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

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

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

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

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

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

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

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

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

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

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

16.03 *Owner May Terminate For Convenience*

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

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

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

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

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

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

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

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and

2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

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

1. elect in writing to invoke the dispute resolution process; or

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for or mutually agreed to, give written notice to the other party of the intent to submit the dispute to the 29th Judicial District Court for St. Charles Parish, State of Louisiana.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

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

1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

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

18.03 *Cumulative Remedies*

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

18.04 *Limitation of Damages and Liquidated Damages*

A. Owner and Contractor recognize that the Owner will suffer direct financial loss if Work is not completed within the Contract Time specified plus any extensions thereof allowed in accordance with these General Conditions of this Contract, and therefore, time is of the essence. They also recognize the delays, expense and difficulties involved in proving in a legal preceding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Contractor and Surety agree to forfeit and pay Owner **One Thousand** dollars (**$1,000.00)** per day as Liquidated Damages for delay (but not as a penalty). Such Liquidated Damages will be assessed for each calendar day that expires after the Contract Time. This amount represents a reasonable estimate of Owner's expenses for extended delays and the costs associated therein. This provision shall be effective between the parties ipso facto and without demand or putting in default, it being specifically agreed that the Contractor by his mere failure to complete the work on or before the date specified shall be deemed in default.

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law and Venue*

A. This Contract shall be governed by the Law of the State of Louisiana.

B. It is agreed and understood that all disputes that arise under the Bidding Documents or Contract Documents shall be litigated in the 29th Judicial District Court for the Parish of St. Charles

18.08 *Headings*

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

18.09 *Compliance for Projects Receiving Special Funding*

A. It is understood that these General Conditions may not comply with rules and regulations required for specific funding by state and or federal agencies. Projects that require special compliance provisions will include Supplementary Conditions (Section-SCP-E-800). These Supplementary Conditions will supersede and be controlling over any conflicting provisions contained in these General Conditions.

18.10 *Attorney's Fees and other costs for enforcement of this Contract,*

A. Should the Owner be required to enforce provisions of this Contract in the 29th Judicial District Court for St Charles Parish or any other Court, then Owner may recover its Attorney's fees, costs for defending or enforcing the Contract, Expert/Professional fees and labor costs incurred by St Charles Parish in assisting enforcement of this contract;

B. Should the Owner be required to defend its actions under the Contract in the 29th Judicial District Court for St Charles Parish or any other Court and prevail, then the Owner shall be entitled to its Attorney's fees costs associated for defending the Contract or its actions, Expert/Professional fees and labor costs incurred by St Charles Parish in assisting enforcement of this contract;

18.11 *Severability and the Survival of the Contract*

A. Each provision of this agreement, contract, supplemental conditions or addenda to this agreement or contract, any plans, specifications, and drawings, is severable from the other provisions. Should any provision found in any of the documents listed become unenforceable or determined to be invalid then the provision of its part thereof, in question or contested shall be ineffective only to the extent required by law, without invalidating the remainder of the provision or the remainder of the other provisions found in any of the documents so listed or the document, itself. To the extent permitted by law any provision found to be invalidate or unenforceable, then that provision shall be redrawn to the extent necessary to render it valid or enforceable consent with intent of the parties as demonstrated throughout any of the documents listed.

18.12 *Entire Contract*

A. This contract, agreement, supplemental conditions or addenda to this agreement or contract, any plans, specifications, and drawings as well as any exhibits attached shall constitute the entire contract and listed documents between the parties pertaining to the subject matter of this contract. This contract supersedes any and all prior and contemporaneous written and oral contracts, agreement or understandings between the parties. Except as otherwise provided within this contract the terms and conditions may not be amended, superseded, terminated or altered except by agreement or change order evidenced by written instrument signed by both parties, authorized and approved by certified copies of an ordinance by the St. Charles Parish Council.

18.13 *Relocation of Infrastructure Items*

A. The cost for relocating, repairing, replacing or removing any unforeseen utilities, pipelines or structures (such as water, sewer, gas, power, drainage, or subsurface obstructions) that are in conflict with the items to be installed under this project, may be paid under item "Relocation of Infrastructure Items" of bid form. **Such work will be paid for only when the work is authorized in writing and deemed necessary by Architect and Owner for performance of this Contract prior to the commencement of the work.** Contractor shall submit an estimated cost for labor, equipment, and materials prior to performing the work. The Contractor shall keep accurate records of all time, materials, and equipment used while

this work is being performed, and shall submit a copy of said record on a daily basis (same day) to the Resident Project Representative for review.

B. Utility/pipeline not properly located prior to construction and subsequently broken or disturbed by the Contractor shall not be considered under this item, "Relocation of Infrastructure Items", for reimbursement. In such a case, it shall be the Contractor's responsibility to remedy the claim with the proper utility/pipeline company at no cost to the Owner or the Architect. Relocation, repair, or removal of any items for the Contractor's convenience will be paid for by the Contractor.

C. The cost of removal, replacement, or relocation of any non-parish utility/pipeline, within a Parish Servitude/Right of Way shall be borne by the respective utility/pipeline companies provided the work is required for proper performance of this Contract. If any of these utilities/pipelines are "unforeseen", outside the Parish Servitude/Right of Way, and require removal, repair, replacement and relocation; the Contractor shall inform the respective utility/pipeline company and determine who will pay for the work. **Such work will be paid for only when the work is authorized in writing prior to the commencement of the work and deemed necessary by Architect and Owner for performance of this Contract.** If the work is to be performed by the utility/pipeline company and reimbursed by the Contractor, reimbursement will be made to the Contractor under item "Relocation of Infrastructure Items". Contractor shall submit an estimated cost for labor, equipment, and materials prior to performing the work. The Contractor shall keep accurate records of all time, materials, and equipment used while this work is being performed, and shall submit a copy of said record on a daily basis (same day) to the Resident Project Representative for review.

SECTION 00804

FIELD ORDER

No. _____

DATE OF ISSUANCE _____ EFFECTIVE DATE_____

Owner: **St. Charles Parish**
Contractor: _____
Contract: _____
Project: **Dog Park**
Owner's Contract No.: **RECBP219** Engineer's Contract No.: **N/A**
ENGINEER: **Civil & Sports Design Engineering, LLC**

Contractor is hereby directed to promptly execute this Field Order, issued in accordance with the General Conditions Paragraph 11.01, for the minor changes in the Work without changes in the Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Time is required, submit a Change Proposal before proceeding with the Work.

Reference: _____ _____
Specification(s) Drawing(s) / Detail(s)

Description: Enter description.

Attachments: List Attachments.

ISSUED:	RECEIVED:
By:	By:
Engineer (Authorized Signature)	Contractor (Authorized Signature)
Title:	Title:
Date:	Date:

Copy to: Owner

Disclaimer: This Field Order, while may require a change in Work, is not a substitute for the Change Order Process found in Article 11 of the General Conditions of the Construction Contract.

SECTION 00805

WORK CHANGE DIRECTIVE

No. _____

DATE OF ISSUANCE _____ EFFECTIVE DATE_____

Owner: **St. Charles Parish**
Contractor: _____
Contract: _____
Project: **Dog Park**
Owner's Contract No.: **RECBP219** Engineer's Contract No.: **N/A**
ENGINEER: **Civil & Sports Design Engineering, LLC**

Contractor is directed to proceed promptly with the following change(s):

Description: Enter description of changes for Contractor.

Attachments: (List documents supporting change) List of supporting documents.

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *(check one)*

- ☐ Non-agreement on pricing of proposed change.
- ☐ Necessity to proceed for schedule or other project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: $_____ [increase] [decrease]

Contract Time _____ days [increase] [decrease]

Basis of estimated change in Contract Price:

- ☐ Lump Sum
- ☐ Unit Price
- ☐ Cost of the Work
- ☐ Other

Recommended:	Limited Authorization By*:	Received:
By:	By:	By:
Engineer (Authorized Signature)	Owner's Representative*	Contractor (Authorized Signature)
Title:	Title:	Title:
Date:	Date:	Date:

*Owner's Representative is not authorized to finalize a Change Order nor does the Work Change Directive substitute the Change Order process as more fully set out in the General Conditions of the Construction Contract.

Approved by Funding Agency (if applicable)

By: Date:

Title:

SECTION 00806

CHANGE ORDER

No. _____

DATE OF ISSUANCE _____ EFFECTIVE DATE_____

OWNER: **St. Charles Parish**
CONTRACTOR: _____
Contract: _____
Project: **Dog Park**
OWNER's Contract No.: **RECBP219** ENGINEER's Contract No.: **N/A**
ENGINEER: **Civil & Sports Design Engineering, LLC**

You are directed to make the following changes in the Contract Documents:
Description: *See attached example on how to fill in this information*

1. Delete the Following Work Items:
    a. Contract Item #: *Line Item description*
    Delete item in its entirety. *(-$ xxx.xx)*
    b. Contract Item #: *Line Item description*
    Delete item in its entirety. *(-$ xxx.xx)*

Total of Deducted Items = *(-$xxx.xx)*

2. Add the Following Work Items:
    a. New Contract Item #: *Line Item description*
    Addition of *$ xxx.xx (L.S.).* See attached cost estimate for details.
    b. New Contract Item #: *Line Item description*
    Addition of *$ xxx.xx (L.S.).* See attached cost estimate for details.

Total of Added Work Items = *(+$xxx.xx)*

3. Revise the Following Work Item Quantities:
    a. Contract Item #: *Line Item description*
    The quantity is to be changed to *define quantity and units*. *(+/-$ xxx.xx)*
    b. Contract Item #: *Line Item description*
    The quantity is to be changed to *define quantity and units*. *(+/-$ xxx.xx)*

Total of Change in Work Items Quantity = *(+/-$xxx.xx)*

Reason for Change Order: List a reason for each Line Item listed above. *See attached example on how to fill in this information*

1. Deleted Work Items
    a. Describe reason for deleting Work Item in detail.
    b. Describe reason for deleting Work Item in detail.
2. Add Work Items
    a. Describe reason for adding Work Item in detail.
    b. Describe reason for adding Work Item in detail.
3. Revise Work Item Quantities
    a. Describe reason for revising Work Item quantities in detail.
    b. Describe reason for revising Work Item quantities in detail.

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:
Original Contract Price $_____
Net Increase (Decrease) from previous Change Orders No. ___ to ___: $_____
Contract Price prior to this Change Order: $_____
Net increase (decrease) of this Change Order: $_____
Contract Price with all approved Change Orders: $_____

CHANGE IN CONTRACT TIMES:
Original Contract Times: Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net change from previous Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net increase (decrease) this Change Order: Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____ (days or dates)

RECOMMENDED:	APPROVED:	ACCEPTED:
By: _____ ENGINEER (Authorized Signature)	By: _____ OWNER (Authorized Signature)	By: _____ CONTRACTOR(Authorized Signature)
Date: _____	Date: _____	Date: _____

CHANGE ORDER

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

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

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both. **A draft copy of the change order shall be reviewed by the Owner before final copies are circulated for signatures.**

Once Engineer has completed and signed **(2) TWO ORIGINAL COPIES** of the change order, the (2) two copies should be sent to Contractor for approval and signatures. After Contractor approval, all (2) two copies should be sent to the Owner for introduction and council vote. Once the change order has been approved by the St. Charles Parish Council, executed copies of the changer order will be distributed to the Engineer and Contractor.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

CHANGE ORDER EXAMPLE

CHANGE ORDER

No. 1 (Final)

DATE OF ISSUANCE EFFECTIVE DATE

OWNER St. Charles Parish
CONTRACTOR Cycle Construction Company, LLC
Contract: Destrehan Regional Wastewater Treatment Plant Phase 2 Headworks Rehabilitation
Project:
OWNER's Contract No. S080501-2
ENGINEER's Contract No. 377543

ENGINEER CH2M HILL

You are directed to make the following changes in the Contract Documents:
Description:

A. Delete the Following Work Items:
- 1) Contract Item: 2) Replacement of Embedded Angles supporting Floor Planking as directed by Owner and Engineer
  Delete item in its entirety. (- $18,750)
- 2) Contract Item: 3) Removal of Existing Aluminum Checker Plate and Fabrication and Installation of Aluminum Grating
  Delete item in its entirety. (- $31,200)
- 3) Contract Item: 6) Project Sign
  Delete item in its entirety. (- $2,000)
- 4) Contract Item: 7) Relocation of Infrastructure
  Delete item in its entirety. (- $20,000)

Total of Deducted Items (-$71,950)

B. Add the Following Work Items :
- 1) New Contract Item: 8) Purchasing and installation of 316 SS base plates. The plates are to be installed between grout pad and rotary screen according to the attached drawing. Contractor is responsible for all measurements.
  Addition of $7,325.15 L.S. See attached cost estimate for details.
- 2) New Contract Item: 9) Repair of approximately 156 S.F. of Concrete that was deteriorated more than 2”
  Addition of $23,602.96 L.S. See attached cost estimate for details.
- 3) New Contract Item: 10) Repair of deteriorated structural steel reinforcement.
  Addition of $7,104.07 L.S. See attached cost estimate for details.
- 4) New Contract Item: 11) Replacement of deteriorated 6” DI Grit Return Pipe with 5” PVC Piping.
  Addition of $3,437.75 L.S. See attached cost estimate for details.
- 5) New Contract Item: 12) Identify and remove deteriorated Planking and replace with new Aluminum Planking. Addition of $6,157.94 L.S. See attached cost estimate for details.
- 6) New Contract Item: 13) Repair of Conduits damaged by Contractor - performed by St. Charles Parish. This is a work item with a negative value, because it is work performed by St. Charles Parish and charged to the Contractor.
  Subtraction of $809.84 L.S. See attached email for details.

Total of Added Work Items ($48,437.71)

C. Revise the Following Work Item Quantities :
- Contract Item: 4) Cleaning, repair, and coating of concrete.
  The quantity is to be changed to 2048 S.F. (-$3,640).

Reason for Change Order:

A. 1) After removal of all aluminum covers and completion of a thorough inspection it was determined that the embedded angles do not require replacement allowing this line item to be deleted.
2) A hydrogen sulfide survey of the headworks area was completed during bidding of this project and high concentrations of gas were detected up to 2 feet above the deck, raising concerns for the health and safety of workers and equipment. A decision was made to keep the structure covered and instead just repair/replace deteriorated planking (see new work item 4).
3) A project sign was determined to not be required for this project.
4) The work item "Relocation of Infrastructure Items" was not used and can be eliminated from the contract.

B. 1) This work will help drain liquids back into conveyance channels avoiding spills and damages to the surrounding concrete surfaces and it will eliminate damages to the grout pad and associated cost when rotary screens are removed in the future.
2) and 3) After removing the structure from service and demolishing the existing gates, extensive damage to concrete and steel reinforcement were discovered that could not be detected during initial investigations and design since areas were flooded with wastewater. The undersides of the concrete slabs that could only be checked when the channels were drained and cleaned were found to be severely damaged. Only steel reinforcement that is critical to the integrity of the structure will be replaced.
4) The outlets and inside of the 6" grit return pipes were significantly corroded and required repair to allow a good finish of the underlayment and epoxy coating.
5) See A2) for details.
6) Damages to 2 electrical conduits that occurred during construction activities were repaired by St. Charles Parish and all labor and material costs will be charged to the contractor.

C. The quantity for this work item included an allowance due to concerns regarding the accuracy of the original plant construction drawings. Upon completion of the work item a final quantity take-off was performed with the engineer, the contractor, and the coating sub-contractor, which resulted in an adjustment of the previously estimated quantities. The final quantity is 52 S.F. less than the base bid work item.

Attachments:

Quotation SS Base Plate

Quotation Concrete and Steel Repairs

Quotation Planking Repair

Email Quotation Conduit Repair

CHANGE IN CONTRACT PRICE:
Original Contract Price $268,950.00
Net Increase (Decrease) from previous Change Orders No. _-__ to _-__: $0.00
Contract Price prior to this Change Order: $268,950.00
Net increase (decrease) of this Change Order: $-27,152.29
Contract Price with all approved Change Orders: $241,797.71

CHANGE IN CONTRACT TIMES:
Original Contract Times: Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net change from previous Change Orders No._to No. ___: Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net increase (decrease) this Change Order: Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____ (days or dates)

RECOMMENDED: APPROVED: ACCEPTED:

By: _____ By: _____ By: _____
ENGINEER (Authorized Signature) OWNER (Authorized Signature) CONTRACTOR(Authorized Signature)

Date: ___8/13/2009_____ Date: _____ Date: _____

SECTION 00808

CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE OF ISSUANCE _____

OWNER: **St. Charles Parish**
CONTRACTOR _____
Contract: _____
Project: **Dog Park**

OWNER's Project No.: **RECBP219** ENGINEER's Project No.: **N/A**

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

To _____
OWNER

And To _____
CONTRACTOR

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

_____
DATE OF SUBSTANTIAL COMPLETION

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

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

OWNER:_____

_____

_____

CONTRACTOR:_____

_____

_____

_____

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

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

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents. **Submit two (2) originals signed and dated by the Engineer and Contractor to St. Charles Parish, Dept of Parks and Recreation, 274 Judge Edward Dufresne Parkway, Luling, La 70070 for processing.**

Executed by ENGINEER on _____
Date

_____
ENGINEER

By: _____
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____
Date

_____
CONTRACTOR

By: _____
(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on _____
Date

_____
OWNER

By: _____
(Authorized Signature)

SECTION 00809

CERTIFICATE OF FINAL ACCEPTANCE

No. _____

DATE OF ISSUANCE _____ EFFECTIVE DATE_____

Owner: **St. Charles Parish**
Contractor: _____
Contract: _____
Project: **Dog Park**
Owner's Contract No.: **RECBP219** Engineer's Contract No.: **N/A**
ENGINEER: **Civil & Sports Design Engineering, LLC**

This Certificate of Final Acceptance applies to:

☐ All Work ☐ The following specified portions of the Work:

_____
Date of Final Acceptance

The work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be complete. The Date of Final Acceptance of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract. The date of Final Acceptance in the Certificate of Final Acceptance marks the completion of the contractual correction period (punch list).

Final acceptance will be based upon satisfactory completion of all Work in accordance to the Contract Documents.

Executed by Engineer:	Authorization and Accepted By:	Accepted:
By: (Authorized Signature)	By: Owner (Authorized Signature)	By: Contractor (Authorized Signature)
Title:	Title:	Title:
Date:	Date:	Date:

END OF SECTION

St. Charles Parish
Parks and Recreation

MATTHEW JEWELL
PARISH PRESIDENT

DUANE FORET
DIRECTOR

NOTICE OF INTENT TO AWARD

Insert Date

TO: _____
_____
_____

PROJECT NAME: **Dog Park**

PROJECT NO: RECBP219

To Whom It May Concern:

You are hereby notified that your bid dated *Enter Date*, for the above Project has been considered. You are the apparent Lowest Responsible Bidder and may be awarded the Contract once all the required documents have been received, reviewed, successfully voted by the St. Charles Parish Council, and executed by the St Charles Parish President.

The Contract Price of this award is *Enter Written Dollar Amount* Dollars ($ *Enter Numerical Amount*).

Deliver all documents to:

Engineer
Civil & Sports Design Engineering, LLC
14433 River Road
Hahnville, LA 70057

Deliver the following documents by _____, 20XX

1. One (1) original Employment Status Verification Affidavit (Section-SCP-E-00475) See La. R.S. 38:2212(B)(3)(a);

2. One (1) original Non Collusive and Non Solicitation Affidavit (Section-SCP-E-00480) See La. R.S. 38:2224;

3. One (1) original Attestation Clause (Section-SCP-E-00470) See La. R.S. 38:2227;

Deliver the following documents by _____, 20XX

1. One (1) original Request to Sublet (Section-SCP-E-00816).

2. One (1) original Contract between Owner and Contractor (Section-SCP-E- 00500) signed and completed. **Do not date the forms**; this will be accomplished upon execution of the Contract by the Owner. Contract price must agree with amount on Louisiana Uniform Public Work Bid Form (Section-SCP-E-00300).

3. One (1) original Payment Bond Form (Section-SCP-E-00610) completed, signed, and sealed. **Do not put date in blank on page 00610-1 & page 00610-2**; this document will be dated upon execution of the Contract by the Owner.

4. One (1) original Performance Bond Form (Section-SCP-E-00611) completed, signed, and sealed. **Do not put date in blank on page 00611-1 & page 00611-2**; this document will be dated upon execution of the Contract by the Owner.

5. One (1) original Certificate of Insurance. Computer generated signature is acceptable. The Certificate must name St Charles Parish as an additional insured on all general liability policies and the standard cancellation clause must read as follows:

   "Should any of the above described policies be canceled or changed by restricted amendment before the expiration date thereof, the issuing Company will give thirty (30) days written notice by registered mail, return receipt requested, to the below named certificate holder."

6. One (1) original Authorization Letter from the bonding Company(s), that are issuing the Performance and Payment Bonds to St. Charles Parish, authorizing the Parish to date the Bonds and Power of Attorney to coincide with the time of execution of the

contract by St. Charles Parish. The Bonding Company is to fill in the location where the bond was signed.

7. One (1) original Authorization Letter from the Contractor authorizing St. Charles Parish to date the contract on behalf of the Contractor at the time of execution of the contract by St. Charles Parish.

Permits – Contractor is responsible for applying and receiving all required permits before construction mobilization. Refer to specifications Section-SCP-E-01800 and Section-SCP-E-01810 for other details and requirements.

Construction Schedule – Contractor shall submit a construction schedule within 14 days of the date of this notice to the Engineer and Owner. Schedule items will include, as a minimum, the following:

- **Time frame will be in days with a starting point at Notice to Proceed**
- **Review and approval time of submittals**
- **Order and delivery time of critical path items**
- **Mobilization and construction set up time**
- **Construction time**
- **Anticipated Substantial Completion date**
- **Anticipated Final Change Order submittal date**
- **Anticipated project closure date**

Failure to comply with these conditions within the time specified will entitle Owner to consider the bid abandoned, to annul this Notice of Intent to Award and to declare the Bid Security forfeited.

Within sixty (60) days after compliance with the above conditions, the Owner will return to the Contractor one fully signed counterpart of the Contract Documents.

If you have any questions, or if we can be of any further assistance, please do not hesitate to contact this office at 985-783-5102, Monday through Thursday 7:30am to 4:30pm.

_____

Duane P. Foret
Director of Parks and Recreation

cc: *Matthew Jewell*, St. Charles Parish President
Darrin Duhe, St. Charles Parish Chief Operating Officer
Marco Juarez, P.E., M.S., Engineering Company Engineer
Michelle Impastato – Parish Council Secretary

St. Charles Parish
Parks and Recreation

MATTHEW JEWELL
PARISH PRESIDENT

DUANE FORET

NOTICE TO PROCEED

Insert Date

TO: _____
_____
_____

PROJECT NAME: **Dog Park**

PROJECT NO.: RECBP219

Gentlemen:

You are hereby notified to commence work on the subject contract on Enter Date and to fully complete the work within **150** calendar days. In accordance with the Contract, the Substantial Completion date is Enter Final Completion Date**.** Any extension in time will be by written Change Order only.

Liquidated Damages: Owner and Contractor recognize that the Owner will suffer direct financial loss if Work is not completed within the Contract times specified plus any extensions thereof allowed in accordance with the General Conditions of this Contract, and therefore, time is of the essence. They also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Contractor and Surety agree to forfeit and pay Owner **One Thousand dollars ($1,000.00)** per day as Liquidated Damages for delay (but not as a penalty). Such Liquidated Damages will be assessed for each calendar day that expires after the Contract Time. This amount represents a reasonable estimate of Owner's expenses for extended delays and the costs associated therein. This provision shall be effective between the parties ipso facto and without demand or putting in default, it being specifically agreed that the Contractor by his mere failure to complete the Work on or before the date specified shall be deemed in default.

Before Work is started, the Contractor shall have submitted to the Engineer and St. Charles Parish for review a final schedule of the proposed construction operations. The Contractor shall

be responsible for developing a final construction sequence to facilitate the construction of this project within the stipulated construction duration. The construction schedule shall indicate the sequence of the Work, the time of starting and completion of each major milestone. The stated time of completion includes an assumed percentage of inclement weather days. No consideration shall be given to a request for a contract time extension due to inclement weather, except for extraordinary conditions such as hurricanes, floods, and the like. No consideration shall be given to a request for a contract time extension due to delays associated with the Contractor's operations such as equipment failures, delivery delays, or other construction practices associated with the Contractor's means and methods necessary to accomplish the scope of work.

Please sign below as official indication of mutual agreement and mail one copy back to the St. Charles Parish Department of Public Works / Wastewater.

_____

Duane P. Foret
St. Charles Parish
Director of Parks and Recreation
274 Judge Edward Dufresne Parkway
Luling, Louisiana 70070

Acceptance of Notice

Receipt of the above Notice to Proceed
is hereby acknowledged by

_____

This _____, _____

By _____

Title _____

cc: *Matthew Jewell*, St. Charles Parish President
Darrin Duhe, St. Charles Parish Chief Operating Officer
Marco Juarez, P.E., M.S., Engineering Company Engineer
Michelle Impastato – Parish Council Secretary

SECTION 00816

REQUEST TO SUBLET

SUBMIT TO ENGINEER

Date	
State Project Number	
Name of Project	**Dog Park, Project No. - RECBP219**
Parish	SAINT CHARLES PARISH

I desire to sublet the following items of work to the undersigned subcontractor:

ITEM NO.	DOLLAR AMOUNT	ITEM NO	DOLLAR AMOUNT

I, as contractor, understand and agree that the subcontractor shall not relieve me of my liability under the contract and bonds, and certify that the subcontractor has the experience, equipment and personnel to satisfactorily perform the subcontracted work, and that the subcontracted work is covered by a written agreement with the subcontractor.

Contractor	**Lic No**
Address	**Tax ID #**
Phone	**Facsimile No**
Signature	**e-mail**
Name	**Title**

I, as subcontractor, understand and agree that no part of the above listed subcontracted work shall be sublet; and I certify that the subcontracted work is covered by a written agreement with the contractor which states that the work shall be performed in accordance with the Contracting Agency construction contract for this project; and that the minimum wages stated in said contract shall be applied to the subcontracted work, if in fact minimum wages are stated in said contract.

Subcontractor	**Lic No**
Address	**Tax ID #**
Phone	**Facsimile No**
Signature	**e-mail**
Name	**Title**

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 LOCATION OF WORK

All of the work of this Contract is located in rights-of-way owned and/or granted right to use by St. Charles Parish.

1.02 WORK TO BE DONE

A. The Contractor shall furnish all labor, materials, equipment, tools, services and incidentals to complete all work required by these Specifications and as shown on the Drawings.

B. The Contractor shall perform the work complete, in place, and ready for continuous service, and shall include repairs, testing, permits, cleanup, replacements and restoration required as a result of damages caused during this construction.

C. All materials, equipment, skills, tools and labor which are reasonably and properly inferable and necessary for the proper completion of the work in a substantial manner and in compliance with the requirements stated or implied by these Specifications or Drawings shall be furnished and installed by the Contractor without additional compensation, whether specifically indicated in the Contract Documents or not.

D. The Contractor shall comply with all Parish, state, federal and other codes which are applicable to the proposed construction work.

1.03 GENERAL DESCRIPTION OF WORK TO BE PERFORMED

A. The Work included in the Contract shall be described in other parts of these Specifications.

B. All work shall be done as described in the Specifications and as shown on the Drawings, complete, tested and ready for operation.

1.04 WORK SEQUENCE

A. All work to be done under the Contract shall be done with minimum inconvenience to the public. The Contractor shall coordinate his work with private property owners such that existing services are maintained to all users at all times.

B. Construct Work in stages to accommodate the Owner's use of the premises during the construction period; coordinate the construction schedule and operations with the Engineer.

C. Construct the Work in stages to provide for public convenience. Do not close off use of facilities until completion of one stage of construction will provide alternative usage.

1.05 CONSTRUCTION AREAS

A. Contractor shall limit his use of the construction areas for Work and for storage, to allow for:

1. Work by other contractors
2. Owner use
3. Public use

B. Coordinate use of work site under direction of Engineer.

C. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.

D. Move any stored products, under Contractor's control which interfere with operations of the Owner or other contractors.

E. Obtain and pay for the use of additional storage or work areas needed for operations.

F. Contractor shall be obligated to share roadways at the construction site with other contractors or subcontractors.

1.06 OWNER OCCUPANCY

Owner will have full access to and use of all existing facilities during the entire period of construction for the conduct of his normal operations. Cooperate with Engineer in all construction operations to minimize conflict and to facilitate Owner usage.

1.07 PARTIAL OWNER OCCUPANCY

The Contractor shall schedule his operations for completion of portions of the Work, as designated, for the Owner's occupancy prior to Substantial Completion of the entire Work.

1.08 PLANS AND SPECIFICATIONS

A. Specifications

The Technical Specifications consist of three parts: General, Products, and Execution. The General section contains general requirements which govern the work. The Products and Execution actions modify and supplement these by detailed requirements of the work and shall always govern whenever there appears to be a conflict.

B. Intent

All work called for in the Specifications applicable to the Contract but not shown on the Plans in their present form or vice versa shall be of like effect as if shown or mentioned in both. Work not specified in either the Plans or in the Specifications but involved in carrying out their intent or in the complete and proper execution of the work is required and shall be performed by the Contractor as though it were specifically delineated or described.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

C. Conflict between Drawings and Specifications

Where an obvious conflict exists between the Plans and Specifications, the Engineer shall decide which governs and the Contractor shall comply with the decision. Such decision shall not be grounds for additional payment to the contractor, i.e., the Contractor shall include the price of the most expensive alternative in his bid.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

SCOPE OF WORK

A. The scope of this section defines the items included in each Bid Item. Payment will be made based on the specified items included in the description in this section for each Bid Item.

B. All contract prices included in the bid form will be full compensation for all labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the Drawings and/or as described in the Specifications to be performed under this contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction. Payment for all items in the bid form will constitute full compensation for all work to be performed under this Contract.

MEASUREMENT

Units of measure shown on bid form shall be as follows unless specified otherwise.

Item	**Method of Measurement**
EA	Each – Field Counted by Owner / Owner's Representative
LF	Linear Foot – Field Measured by Owner / Owner's Representative
LS	Lump Sum – Unit is One; no measurement will be made
SF	Square Foot – Field Measurement by Owner / Owner's Representative
SY	Square Yard – Field Measurement by Owner / Owner's Representative
CY	Cubic Yard – Field Measurement by Owner / Owner's Representative

PAYMENT

Progress payments will be made monthly.

The date for Contractor's submission of monthly Application for Payment shall be established at the Pre-Construction Conference.

Partial payment for stored materials and unit priced items shall be as described in Article 15 of the General Conditions,

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

ITEM __ MOBILIZATION / DEMOBILIZATION

A. Measurement

Measurement of work for payment of this item shall be on a lump sum basis as established in the bid, and broken down in accordance with Section-SCP-E-01370 and Payment (Section B) below.

B. Payment

Payment shall be based on preparatory work and operations to include, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, the establishment of construction offices, and other facilities necessary for work on the project and the cost of bonds. Examples of activities that can be included in the Mobilization / Demobilization Line Item, but not be limited to, are payments for Bonds and Insurance, storage /office trailers, construction fencing, tool purchases, permits obtained by the contractor, fees or costs from city/parish/state/federal agencies as a requirement to perform activities within the scope of the project, costs to transport equipment, tools and materials to the job site, etc. At no time shall the same activity be claimed in multiple line items on the bid form, resulting in a duplicate payment for the same activity.

Partial payments for Mobilization/Demobilization will be divided into five (5) payments being made to spread the costs over the duration of the project. No price adjustment will be made for this due to changes and/or extensions of time and any increased mobilization cost incurred by the Contractor due to any additional work occasioned by such changes.

Partial payments for mobilization shall be made in accordance with the schedule of Table 1150-1, based on the percent earned of original total contract amount

(less the Line Item for Mobilization/Demobilization), for a total amount equal to the line item for Mobilization / Demobilization.

Table 1150 – 1
Mobilization/Demobilization Payment

Percent of Total Contract Amount Earned (Excluding the Line Item for Mobilization/Demobilization)	Allowable Percent of the Lump Sum Price for Mobilization/Demobilization
1st Partial Estimate	25% of Line Item Amount
10% of Contract Amount	50% of Line Item Amount
25% of Contract Amount	75% of Line Item Amount
50% of Contract Amount	85% of Line Item Amount
100% (at Substantial Completion)	100% of Line Item Amount

If the Contract is cancelled by the Owner, the Contractor will be paid for the actual cost for mobilization at the time of cancellation, which said cost shall not exceed the total amount bid under this item.

Nothing herein shall be construed to limit or preclude partial payment otherwise provided by the Contract.

ITEM __ RELOCATION OF INFRASTRUCTURE ITEMS

A. Measurement

Measurement of work for payment of this item shall be the actual relocation cost of **unforeseen** utilities or structure in conflict with items to be installed by the project. Section-SCP-E-10100 discusses this particular Bid Item in detail, along with the requirements for use and payment thereunder.

B. Payment

Relocation of Infrastructure Items – **LUMP SUM**

END OF SECTION

SECTION 01152

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

Submit Applications for Payment to the Engineer in accord with the General Conditions and in the form required by the Owner.

Owner reserves the right to withhold payment until Application for Payment is presented in a form acceptable to Owner.

1.02 FORMAT AND DATE REQUIRED

A. Submit applications typed on forms provided by the Owner.

B. Provide detailed substantiating data on additional sheets, including paid invoices where applicable.

1.03 PREPARATION OF APPLICATION FOR PROGRESS PAYMENTS

A. Application Form:

1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.

2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.

3. Execute certification with signature of a responsible officer of the Contractor.

B. Continuation Sheets:

1. Fill in total list of all scheduled component items of work, with item number and scheduled dollar value for each item.

2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.

3. List each Change Order executed prior to date of submission by Change Order Number and description.

4. To receive payment for materials stored on site, submit copies of the original paid invoices with the application for payment.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. Provide substantiating data containing suitable information for review of costs requested with the applications for progress reports identifying:

1. The payment item to which the substantiating data applies.

2. Application number and date.

3. Detailed list of enclosures.

4. For stored materials:

a. Item number and identification as shown on the application.

b. Description of specific material.

B. Submit one copy of data for each copy of application for payment.

1.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

Fill in Application form as specified for progress payments.

1.06 SUBMITTAL PROCEDURE

A. Submit applications for payment to the Engineer at the times stipulated in the General Conditions.

B. Initially a pencil draft application shall be informally submitted to the Engineer who shall review the draft with the Contractor and make adjustments as appropriate. The Contractor shall then prepare a formal typed application using the informally approved amounts and submit four (4) complete sets to the Engineer.

C. When the Engineer finds the application properly completed and correct, as informally approved, he will transmit it to the Owner for payment with a copy to the Contractor.

1.07 STORED MATERIALS

A. With each Application for Payment, the Contractor shall submit to the Owner a written list identifying each location where materials are stored off the Project Site and the value of materials at the location.

B. The consent of any Surety shall be obtained to the extent required prior to payment for any materials stored off the Project Site.

END OF SECTION

SECTION 01153

CHANGE ORDER PROCEDURES

PART 1: GENERAL

1.01 REQUIREMENTS INCLUDED

A. Promptly implement change order procedures.

1. All change orders shall be implemented on the standard St. Charles Parish - Contract Change Order Form. These forms are available upon request.

2. Provide full written data required to evaluate changes.

3. Maintain detailed records of work done on a time-and-material/ force account basis.

4. Provide full documentation to Engineer on request.

B. Designate in writing the member of Contractor's organization:

1. Who is authorized to accept changes in the Work.

2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.

C. A change order is not finalized until signed by the Parish President of St. Charles Parish.

1.02 RELATED REQUIREMENTS

A. Conditions of the Contract are included in Section 00700.

1. Methods of determining cost or credit to Owner resulting from changes in Work made on a time and material or unit price basis.

2. Contractor's claims for additional costs.

1.03 DEFINITIONS

A. Change Order: See General Conditions.

B. Construction Change Authorization: A written order to the Contractor, signed by Owner and Engineer, which amends the Contract Documents as described and authorized Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.

C. Field Order: A written order to the Contractor, signed by the Engineer and the Contractor, which is issued to interpret/clarify the Contract Documents, order

minor changes in the work and/or memorialize trade-off agreements. The work described by a Field Order is to be accomplished without change to the Contract Sum, Contract Time, and claims for other costs.

1.04 PRELIMINARY PROCEDURES

A. Owner or Engineer may initiate changes by submitting a Request for Proposal (RFP) to Contractor. Request will include:

1. Detailed description of the change.

2. Supplementary or revised Drawings and Specifications.

3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.

4. A specific period of time during which the requested price will be considered valid.

5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.

B. Contractor may initiate changes by submitting a written notice to Engineer, containing:

1. Description of the proposed changes.
2. Statement of the reason for making the changes.
3. Statement of the effect on the Contract Sum and the Contract Time.
4. Statement of the effect on the work of other contractors.
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.05 WORK DIRECTIVE CHANGE AUTHORIZATION

A. In lieu of a Request for Proposal, Engineer may issue a work directive change authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.

B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.

C. Owner and Engineer will sign and date the authorization as approval for the Contractor to proceed with the changes.

D. Contractor may sign and date the Authorization to indicate agreement with the terms therein.

1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

A. Support each quotation for a lump-sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow Engineer to evaluate the quotation.

B. On request, provide additional data to support time and cost computations:

1. Labor required.
2. Equipment required.
3. Products required.

    a. Recommended source of purchase and unit cost.
    b. Quantities required.

4. Taxes, insurance and bonds.
5. Credit for work deleted from Contract, similarly documented.
6. Overhead and profit.
7. Justification for any change in Contract Time.

C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.

1. Name of the Owner's authorized agent who ordered the work and date of the order.
2. Dates and times work was performed and by whom.
3. Time record, summary of hours worked and hourly rates paid.
4. Receipts and invoices for:

    a. Equipment used, listing dates and times of use.
    b. Products used, listing of quantities.
    c. Subcontracts.

1.07 PREPARATION OF CHANGE ORDERS AND FIELD ORDERS

A. Engineer will prepare each Change Order and Field Order.

B. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.

C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

D. Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the Work, and/or memorialize trade-off agreements.

E. Field Order work will be accomplished without change in the Contract Sum, Contract Time, and/or claims for other costs.

1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Engineer's Proposal Request and Contractor's responsive proposal as mutually agreed between Owner and Contractor.

2. Contractor's proposal for a change, as recommended by Engineer.

B. Owner and Engineer will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

C. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

1.09 UNIT PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Engineer's definition of the scope of the required changes.
2. Contractor's proposal for a change, as recommended by Engineer.
3. Survey of completed work.

B. The amounts of the unit prices to be:

1. Those mutually agreed upon between Owner and Contractor.

C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:

1. Owner and Engineer will sign and date the Change Order as authorization for Contractor to proceed with the changes.

2. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

D. When quantities of the items cannot be determined prior to start of the work:

1. Engineer or Owner will issue a construction change authorization directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.

2. At completion of the change, Engineer will determine the cost of such work based on the unit prices and quantities used.

a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.

3. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.

4. Owner and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/WORK DIRECTIVE CHANGE AUTHORIZATION

A. Engineer and Owner will issue a Work Directive Change Authorization directing Contractor to proceed with the changes.

B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.

C. Engineer will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.

D. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.

E. Owner and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

A. Periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.

B. Periodically revise the Construction Schedule to reflect each change in Contract Time.

1. Revise subschedules to show changes for other items of work affected by the changes.

C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2: PRODUCTS (NOT USED)

PART 3: EXECUTION (NOT USED)

END OF SECTION

SECTION 01340

SHOP DRAWINGS, PROJECT DATA, AND SAMPLES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall submit to the Engineer for review and exception, if any, such working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this article called data), and material samples (hereinafter in this article called samples) as are required for the proper control of work, including but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.

B. Within thirty (30) calendar days after the Effective Date of the Agreement, the Contractor shall submit to the Engineer a complete list of preliminary data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way relieve the Contractor from submitting complete shop drawings, data, and samples in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.

1.02 CONTRACTOR'S RESPONSIBILITY

A. It is the duty of the Contractor to check all drawings, data and samples prepared by or for him before submitting them to the Engineer for review. Each and every copy of the Drawings and data shall bear Contractor's stamp showing that they have been so checked. Shop drawings submitted to the Engineer without the Contractor's stamp or evidence that the Contractor has not performed the required review will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the Contract Documents.

B. Determine and verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data
4. Conformance with Specifications and indicate all variances from the Specifications.

C. The Contractor shall not begin any of the work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him by the Engineer with no exceptions taken.

D. The Contractor shall submit to the Engineer all drawings and schedules sufficiently in advance of construction requirements to provide no less than twenty-one (21) calendar days for checking and appropriate action from the time the Engineer receives them.

E. The Contractor shall submit six (6) copies of shop drawings and descriptive or product data submittals to complement shop drawings to the Engineer which will be retained for his use. The Contractor shall submit extra sets as required for his subcontractors, his suppliers, and his own use.

1.03 ENGINEER'S REVIEW OF SHOP DRAWINGS

A. The Engineer's review of drawings, data and samples submitted by the Contractor will cover only general conformity to the Specifications, external connections, and dimensions which affect the installation.

B. The review of drawings and schedules will be general, and shall not be construed:

1. as permitting any departure from the Contract requirements;
2. as relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;
3. as approving departures from details furnished by the Engineer, except as otherwise provided herein.

C. If the drawings or schedules as submitted describe variations per subparagraph (1.04.C), and show a departure from the Contract requirements which Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or Time, the Engineer may return the reviewed drawings without noting any exception.

D. When reviewed by the Engineer, each of the Shop Drawings will be identified as having received such review being so stamped and dated. Shop Drawings stamped "NOT APPROVED" and with required corrections shown will be returned to the Contractor for correction and resubmittal.

E. Resubmittals will be handled in the same manner as first submittals. The Contractor shall direct specific attention to revisions other than the corrections requested by the Engineer on previous submissions by written details or marking on the resubmitted Shop Drawings. The Contractor shall make any corrections required by the Engineer.

F. If the Contractor considers any correction indicated in the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.

G. The Engineer will review a submittal/resubmittal a maximum of three (3) times after which cost of review will be borne by the Contractor. The cost of engineering shall be equal to the Engineer's charges to the Owner under the terms of the Engineer's agreement with the Owner.

H. When the Shop Drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions or approval from the Engineer.

I. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor, and will be considered "NOT APPROVED" until resubmitted.

1.04 SHOP DRAWINGS

A. Shop drawings shall be complete and detailed.

B. Drawings and schedules shall be checked and coordinated with the work of all trades involved, before they are submitted for review by the Engineer and shall bear the Contractor's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned to the Contractor for resubmission.

C. Each Shop Drawing shall have a blank area 3-1/2 inches by 3-1/2 inches, located adjacent to the title block. The title block shall display the following:

1. Number and title of the drawing.
2. Date of drawing or revision.
3. Name of project building or facility.
4. Name of Contractor and subcontractor submitting drawing.
5. Clear identification of contents and location of the work.

D. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations, he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings have been reviewed.

E. Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material as required. Materials and equipment lists shall give for each item thereon the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish and all other pertinent data.

F. The Contractor shall provide a list including the equipment name, address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained for all mechanical and electrical equipment furnished.

G. All manufacturers or equipment suppliers who proposed to furnish equipment or products shall submit an installation list to the Engineer along with the required shop drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in operation for a period of at least one (1) year.

H. Before final payment is made, the Contractor shall furnish to Engineer six (6) sets of record shop drawings all clearly revised, complete and up to date showing the permanent construction as actually made for all reinforcing and structural steel, miscellaneous metals, process and mechanical equipment, yard piping, electrical system and instrumentation system.

END OF SECTION

SECTION 01370

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. If applicable, submit to the Engineer a Preliminary Schedule of Values in accordance with Article 2 of the General Conditions (SCP-E-00700).

B. Upon request of the Engineer, support the values with data which will substantiate their correctness.

C. Refine the Schedule of Values to provide a detailed schedule and submit to the Engineer at least ten days prior to the first Application for Payment. The final Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

A. Type schedule on 8-1/2 inch X 11 inch or 8-1/2 inch X 14 inch white paper. Contractor's standard forms and automated printout will be considered for approval by the Engineer upon Contractor's request. Identify schedule with:

1. Title of Contract and location.
2. Engineer and Contract numbers.
3. Name and Address of Contractor.
4. Contract designation.
5. Date of submission.

B. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as basis for computing values for progress payments during construction.

C. Identify each line item with the number and title of the respective major section of the specifications.

D. For each major line item list sub-values of major products or operations under the item.

E. For the various portions of the Work:

1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.

2. For items on which progress payments will be requested for stored materials, break down the value into:

a. The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials upon request by the Engineer.

b. The total installed value.

F. Follow the Louisiana Uniform Public Work Bid Form (SCP-E-00300) Schedule of Prices as the format for listing component items.

G. The sum of all lump sum values listed in the schedule shall equal the total Contract Sum.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01410

TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

Owner will employ and pay for the services of an Independent Testing Laboratory to perform testing specifically indicated on the Contract Documents or specified in the Specifications and may at any other time elect to have materials and equipment tested for conformity with the Contract Documents.

1. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
2. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the work of the Contract.
3. St. Charles Parish may invoice Contractor for any testing services standby cost due to Contractor delay or improper scheduling of testing services.

1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

Laboratory is not authorized to:

A. Release, revoke, alter or enlarge on requirements of Contract Documents.

B. Approve or accept any portion of the Work.

C. Perform any duties of the Contractor.

1.03 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel, provide access to Work, to Manufacturer's operations.

B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require control by the testing laboratory.

D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard Specifications for quality and workmanship are indicated in the Contract Documents. The Engineer may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the Standard Specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor, and no extra charge to the Owner shall be allowed on account of such testing and certification.

E. Furnish incidental labor and facilities:

1. To provide access to Work to be tested.
2. To obtain and handle samples at the Project site or at the source of the product to be tested.
3. To facilitate inspections and tests.
4. For storage and curing of test samples.

F. Notify laboratory at least 24 hours in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

G. If the test results indicate the material or equipment complies with the Contract Documents, the Owner shall pay for the cost of the testing laboratory. If the tests and any subsequent retests indicate the materials and equipment fail to meet the requirements of the Contract Documents, the Contractor may be directed to pay for the laboratory costs directly to the testing firm or the total of such costs shall be deducted from any payments due the Contractor.

END OF SECTION

SECTION 01530

PROTECTION OF EXISTING FACILITIES

PART 1 - GENERAL

1.01 Description

The Contractor shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements specified herein, and in accordance with the requirements of the Contract Documents.

1.02 Utility Exploration.

The Contractor shall determine the exact locations and depths of all utilities. Where necessary, the Contractor shall make exploratory excavations of all utilities. All such exploratory excavations shall be performed as soon as practicable after award of contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's work.

1.03 Rights-of-Way

The Contractor shall not do any work that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the Contractor enter upon the rights-of-way involved until the Contractor has secured authority therefore from the proper party. After authority has been obtained, the Contractor shall give said party due notice of its intention to begin work, and shall give said party convenient access and every facility for removing, shoring, supporting, or otherwise protecting such pipeline, transmission line, ditch, fence, or structure, and for replacing same.

When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the Owner shall decide which Contractor shall progress at the same time, and in what manner. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the Owner to the Contractor so desiring, to the extent, amount, in the manner, and at the times permitted. No such decision as to the method or time of conducting the work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the work in the General Conditions of the Contract.

1.04 Protection of Street or Roadway Markers and Traffic Signs

The Contractor shall not destroy, remove, or otherwise disturb any existing survey

markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced for easy and accurate restoration. It shall be the Contractor's responsibility to notify the proper representatives of the Owner of the time and location that work will be done. Such notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed, without proper authorization by the Engineer, will be accurately restored at the Contractor's expense after all street or roadway resurfacing has been completed. All traffic signs shall be restored to the original condition and location at the Contractor's expense.

1.05 Notification by the Contractor

Prior to any construction work in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way the Contractor shall notify the respective authorities(including St Charles Parish Wastewater, Waterworks, and Drainage Departments) representing the owners or agencies responsible for such facilities not less than two (2) working days (48 hours), nor more than five (5) working days prior to excavation so that a representative of said owners or agencies can be present during such work if they so desire. The Contractor shall request that each utility Owner mark (or stakeout) in the field the location of existing facilities.

1.06 Conflicts with Other Utilities

A. It shall be the Contractor's responsibility to give the appropriate utility company(or St Charles Parish Departments) sufficient advance notice so that their representatives may verify the utility location on the job site when trenching/excavation operations begin. The Contractor shall coordinate and cooperate with these utilities to insure that no damages occur which would cause interruption of their services.

B. All temporary support, or minor adjustment which does not require replacement or direct by-pass connections to these existing services (such as all direct-buried telephone cables or two-inch and smaller gas lines) will be the responsibility of the Contractor.

C. Where it may be necessary to relocate or de-energize electrical power lines (aerial or buried), gas mains or telephone ducts (defined here as gas lines larger than 2-1/2 inches and telephone cables within ductwork) all such relocation work must be performed by the respective utility companies personnel, unless written authorization is given to Contractor by utility to perform such work. The Contractor shall immediately notify the proper utility company and the Engineer in writing of the occurrence and location of such required relocations. **Any costs associated with this work shall be paid by the Contractor.**

D. **The Owner will not be responsible for any delay or inconvenience to the Contractor resulting from the existence, removal or adjustment of any utility. Additional costs incurred as a result therefore shall be the expense of the Contractor.**

E. Contractor shall be responsible for maintenance of existing drainage patterns by temporary ditches, culverts, etc. **Temporary installations shall be approved by St. Charles Parish prior to installation.** All existing drainage facilities shall be returned to original condition prior to completion of contract.

F. The Contractor is ultimately responsible for any construction costs arising from conflicts with other utilities associated with the necessary removal, relocation, or temporary re-routing of all such utilities.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 Existing Utilities and Improvements

A. General

The Contractor shall protect all utilities and other improvements which may be impaired during construction operations. **It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities and other improvements indicated on the drawings that will be encountered in his construction operations and to see that such utilities or other improvements are adequately protected from damage due to such operations.** The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be directed by the Engineer.

B. Utilities to be moved

In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon proper application by Contractor, be notified by the Contractor to move such property within a specified reasonable time, and the Contractor shall not interfere with said property until after the expiration of the time stipulated.

C. Owner's Right of Access

The right is reserved to the Owner and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the work of this Contract.

D. Known Utilities

Existing utility lines that are shown on the drawings or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the Contractor at his expense.

E. Unknown Utilities

The Contractor is required to use care in preparing excavations and shall conduct Utility Explorations including utility excavations and field investigations to assess the layout of subsurface facilities at each excavation site prior to the commencement of work. The Contractor shall uncover subsurface obstructions in advance of construction so that existing subsurface facilities may be identified before the work reaches the obstruction. The Contractor shall proceed at all times with caution while excavating.

Should the Contractor encounter subsurface and/or latent conditions at the site substantially different from those shown on the Drawings or indicated in the Specifications, he shall immediately give notification to the Engineer of such conditions. The Engineer shall thereon promptly investigate the conditions and if he finds that they are substantially different from those shown on the Plans or Specifications, he shall request a cost estimate from the contractor. No work shall begin until it has been authorized by the owner. Any cost resulting from these changes when appropriate shall be adjusted under the applicable provisions of the contract documents and specification 10100 Relocation of Infrastructure.

F. Utilities to be removed

When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Utility Owner and the Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of the service.

G. Approval of Repairs

All repairs to a damaged improvement shall be inspected and approved by an authorized representative of the improvement owner before being concealed by backfill or other work.

H. Relocation of Utilities

Where the proper completion of the work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is shown on the drawings, the Contractor shall at its own expense and with prior approval from the Owner of the utility, remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the Owner of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the

Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal. In the event that the Utility Owner prefers its personnel to perform the above described work, the Contractor shall fully reimburse said utility Owner for any costs associated with such work.

I. Maintaining in Service

All oil and gasoline pipelines, power, and telephone or other communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the work shall be maintained continuously in service during all the operations under the Contract, unless other arrangements are made satisfactory to the Owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The Contractor shall be responsible for and shall make good all damage due to its operations and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

3.02 Trees and Shrubs within Street Rights-Of-Way and Project Limits

A. General

The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim, remove or relocate any trees unless such trees have been approved for trimming, removal or relocation by the Engineer and the jurisdictional agency or Owner. All existing trees and shrubs which are damaged during construction shall be trimmed, replaced, or relocated by the Contractor or a certified tree company under permit from the jurisdictional Agency or Owner. Tree trimming, replacement, and relocation shall be accomplished in accordance with the following paragraphs. The cost of such work shall be considered incidental to the construction of the sewerage facilities and no direct payment will be made.

B. Trimming

Symmetry of the tree and shrubs shall be preserved; no stubs or splices or torn branches left; clean cuts shall be made close to trunk or large branch. Spikes shall not be used for climbing live trees. All cuts over 1-1/2 inches in diameter shall be coated with an asphaltic emulsion material.

C. Relocate

The Contractor shall remove and relocate existing trees and/or shrubs which conflict with the construction operations of the Contractor. Trees and/or shrubs shall be relocated within the median area as directed by Owner.

D. Replacement

The Contractor shall immediately notify the jurisdictional agency and/or the Owner if any tree or shrub is damaged by the Contractor's operations. If, in the opinion of said agency or the Owner, the damage is such that replacement is necessary, the Contractor shall replace the tree or shrub at its own expense. The tree or shrub shall be of a like size and variety as the one damaged, or, if of a smaller size, the Contractor shall pay to the Owner of said tree a compensatory payment acceptable to the tree owner, subject to the approval of the Engineer and the jurisdictional agency or Owner.

3.03 Pole Relocation and Protection

A. The Contractor shall take notice of any power, telephone and traffic signal support poles along the length of the project; several may be in proximity to, or direct conflict with, the alignment of the proposed facilities. The relocation of all poles on the plans noted as to be relocated shall be the responsibility of and must be performed by the respective utility companies. The Contractor shall immediately notify the proper utility company and the Engineer in writing of the occurrence and location of such required relocations.

B. For all poles without such notations, it is intended that they shall be supported with mud jackets or by other means of bracing as required by the utility company to maintain them in a stable condition. The temporary support and subsequent stability of these poles will be the Contractor's responsibility.

3.04 Existing Fence lines and Gates

At various locations along the length of the project, existing fences and gates might conflict with or impair construction. Contractor shall protect these fences in place where they do not conflict with construction operations. Where a fence or gate may conflict with construction, the Contractor shall contact the owner and arrange for the temporary removal or relocation of the fence. Any fence or gate removed or temporarily relocated shall be restored to its original condition and location unless otherwise indicated on the plans or arranged with owners of the fence. Where it is impossible to salvage the existing materials to reconstruct the fence or gate, the fence shall be replaced "in kind".

3.05 Temporary Road and Other Surfaces.

The Contractor shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time as specified in the plans.

A. Prior to placing the temporary surface, the foundation material underlying the areas to receive surfacing shall be densified to the degree specified in the Technical Specifications.

B. The street and surrounding area shall be cleared of rubbish and debris. The street shall be swept and the surrounding area shall be cleaned thoroughly.

C. The Contractor shall stockpile enough temporary surfacing material on the job site to insure a ready supply at all times for necessary repairs to the temporary

surface already placed.

D. The temporary surface shall be left in place until permanent surfacing is ready for application.

E. No separate payment will be allowed for temporary surfacing and all costs therefore shall be included in the Contractor's bid price.

END OF SECTION

SECTION 01580

PROJECT IDENTIFICATION AND SIGNS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. install and maintain the Owner's project identification sign.

B. Remove sign upon direction of Owner.

C. Allow no other signs to be displayed.

1.02 OWNER SUPPLIED PROJECT IDENTIFICATION SIGN

A. Painted sign(s), of not less than 4ft X 8ft, with painted graphic content to include:

1. Title of Project
2. Name of Owner
3. Names and titles of authorities as per directed by the Owner

B. Erect on the site at a lighted location of high public visibility, as approved by the Engineer and the Owner.

C. The Owner shall supply the successful bidder with a project sign upon execution of the Contract.

PART 2 – PRODUCTS

2.01 SIGN MATERIALS

C. Rough Hardware: Galvanized.

D. Paint: Exterior quality to withstand 1 year service without fading.

PART 3 – EXECUTION

3.01 PROJECT IDENTIFICATION SIGNS

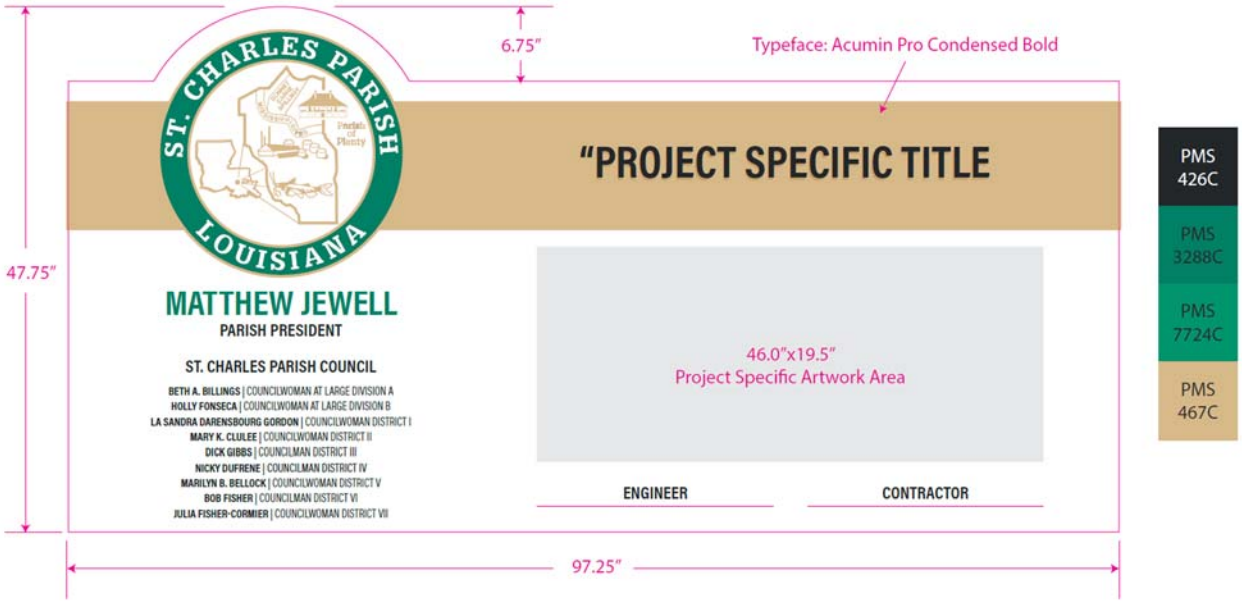
A. Paint exposed surface of supports, framing and surface material; one coat of primer and one coat of exterior paint.

3.02 MAINTENANCE

Maintain signs and supports in a neat, clean condition; repair damages to structures, framing or sign.

3.03 REMOVAL

Remove signs, framing, supports, and foundations at completion of project.



END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

The Contractor shall comply with the requirements stated in the General Conditions and in the Specifications for administrative procedures in closing our the Work.

1.02 FINAL INSPECTION

A. When the Contractor considers the Work is substantially complete, he shall submit to the Engineer:

1. A written notice that the Work or designated portion thereof is substantially complete.
2. A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, the Engineer will make an inspection to determine the status of completion. The Engineer's opinion as to the status of completion shall be based on completion of the work as shown on the plans and called for in the specifications.

C. Should the Engineer determine that the Work is not substantially complete:

1. The Engineer will promptly notify the Contractor in writing, giving the reasons therefore.
2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.
3. The Engineer will re-inspect the Work.

D. When the Engineer finds that the Work is substantially complete, he will:

Prepare and deliver to Owner a Certificate of Substantial Completion.

E. When the engineer finds that the punch list (established at the time the contractor is presented with the Certificate of Substantial Completion) is complete the engineer will prepare & deliver a Certificate of Final Acceptance.

1.03 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the Engineer.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.
2. Additions and deductions resulting from:
    a. Previous Change Orders
    b. Unit Prices
    c. Deductions for uncorrected Work
    d. Penalties and Bonuses
    e. Deductions for liquidated damages
    f. Deductions for reinspection payments
    g. Other adjustments
3. Total Contract Sum, as adjusted.
4. Previous Payments.
5. Sum remaining due.

C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.04 APPLICATION FOR PAYMENT

Upon receipt of approval of the final change order Contractor shall submit an Application for Payment in accordance with procedures and requirements stated in the General Conditions.

1.05 CONTRACT CLEAR LIEN CERTIFICATE AND PAYMENT OF RETAINAGE

A. Upon receipt of the Owner's Certificate of Substantial Completion, the Contractor shall make filings with the Recorder of Mortgages, as required by Louisiana State Public Contract Statute.

B. In accordance with the Louisiana State Public Contract Statute, the Recorder of Mortgages shall issue a Clear Lien and Privilege Certificate upon expiration of a period of not less than forty-five (45) days, provided no liens are recorded against the project.

C. Upon receipt of the Clear Lien and Privilege Certificate, the Contractor shall submit an application for payment to the Engineer requesting the release of the project retainage with the Clear Lien & Privilege Certificate attached as evidence of authority for the Owner to pay the retainage.

D. The Engineer shall review the application for payment of the project retainage and if in order shall transmit the application to the Owner for payment.

E. In accordance with the General Conditions, the Owner shall release, the project retainage and make payment to the Contractor the legal sum of the retainage for which the Contractor is entitled.

END OF SECTION

SECTION 01710

CLEANING

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

Cleaning shall include daily "policing" of the work and surrounding areas to clear general debris, waste paper, wood scraps, steel scrapes, and other objectionable material along with the final cleanup of site(s) required for project acceptance.

1.02 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION

A. Execute daily cleaning to keep the work site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.

B. Provide onsite containers for the collection of waste materials, debris and rubbish. All waste materials including containers, food debris and other miscellaneous materials must be disposed of daily in onsite containers.

C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.02 FINAL CLEANING

A. Employ skilled workmen for final cleaning.

B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

C. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.

D. Prior to final completion or Owner occupancy, Contractor shall conduct a sight inspection of interior and exterior surfaces and all work areas to verify that all work is clean.

END OF SECTION

SECTION 01800

PERMITS

PART 1 - GENERAL

1.01 REQUIREMENTS

Contractor has the responsibility to submit application(s) for, comply with Permit(s) conditions of and receive **all applicable permits,** to include: St. Charles Parish Planning and Zoning, the Louisiana Department of Environmental Quality (LDEQ), and any other regulatory, commercial, industrial and utility agency(s) prior to any construction which affects those agencies by the scope of work for this project.

Contractor has the responsibility to comply with any and all Right of Way(s) and Servitude(s) conditions as determined in the ROW and Servitude Agreements for the property in which the Scope of Work is affecting.

Contractor is required to immediately take corrective action on all spills and any releases beyond the construction site. Contractor is also responsible for proper disposal of all spill material and required regulatory notifications.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 PRIOR TO CONSTRUCTION

A. The following permits can be found in Appendix A: Department of Natural Resources and US Army Corps of Engineers.

B. Contractor notification to acquire the permit(s) will be given when St Charles Parish issues the project **Notice of Intent to Award** specification in Section SCP-E-00810.

C. Contractor will contact St. Charles Parish Planning and Zoning to determine if any permits are required.

D. Contractor will determine if a Storm Water Permit is required and what control measures will be needed. See specification in Section SCP-E-01810 for more information.

E. If determined, contractor will be required to apply for all permits in addition to B & C above.

F. Contractor is required to comply to all permit conditions and requirements associated with the Project.

G. The contractor will be required to send a copy of the approved permit(s) and the Storm Water Pollution Prevention Plan (SWPPP) to the engineer and owner before start of construction.

3.02 DURING CONSTRUCTION

A. Properly install all control measures and comply with all conditions as specified in the permit(s).

B. Periodically inspect, at least once a week that all control measures are in working order and repair any deficiencies.

C. Maintain required recordkeeping and corrective action log.

3.03 PROJECT COMPLETION

A. Remove all control measures and return landscape to conditions specified in the project.

B. Comply with all Permit conditions concerning Project Completions, to include, but be limited to notifications of Project Completion to the appropriate Permit authorities.

3.04 PROJECT DELAYS

A. The Contractor is responsible for complying with any and all permits required for the project. As such, any failure to follow required permits does not entitle the Contractor to any additional compensation (in time and/or money) unless approved in advance by the Engineer and the Owner.

B. Any delays or cost incurred by the Contractor as a result of complying with conditions of the Permit(s), ROW(s) or Servitude(s) associated within the Scope of Work for this Project does not entitle the Contractor to any additional compensation (in time and/or money) unless approved in advance by the Engineer and the Owner.

C. Any delays or cost incurred by the Contractor as a result of unforeseen delays from a regulatory, commercial, industrial and utility agency(s) associated within the Scope of Work for this Project does not entitle the Contractor to any additional compensation (in time and/or money) unless approved in advance by the Engineer and the Owner.

END OF SECTION

SECTION 01810

STORM WATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES
Louisiana Pollutant Discharge Elimination System (LPDES) General Permit
For Storm Water Discharges from Construction Activities

PART 1 - GENERAL

1.01 REQUIREMENTS

The Parish will follow the State of Louisiana General Permits which regulates pollutant discharges from construction activities.

LPDES General Permit Nos.
LAR100000, LAR200000

Pursuant to the Clean Water Act, as amended (33 U.S.C. 1251 et seq.), and the Louisiana Environmental Quality Act, as amended (La R. S. 30:2001 et seq.), rules and regulations effective or promulgated under the authority of said Acts, the Louisiana Pollutant Discharge Elimination System (LPDES) General Permits are issued. These permits authorize the discharge of storm water from construction activities to waters of the State, in accordance with the conditions and requirements set forth in the permits.

Please note that there are requirements associated with these permits, depending on the size of the project. Listed below are the conditions, grouped by project size. If you have any questions, you can contact St. Charles Parish Department of Public Works and Wastewater or Louisiana Department of Environmental Quality.

To review LAR100000 and/or LAR200000, "Notice of Intent", and other forms:
www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/LPDESPermits.aspx

More information on storm water management regulations and Best Management Practices can be found at:
www.stormwatercenter.org
www.epa.gov/region6/water/npdes

A complete guide, including examples and templates, to Storm Water Pollution Plan (SWPPP) can be found at:
www.epa.gov/npdes/swpppguide

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 Small Construction Sites (less than one (1) acre)

If the disturbed acreage at construction is less than the State regulated limit of one (1) acre, no permit from DEQ required, but it is suggested that erosion control be implemented during and after construction for storm water pollution control during a storm event. **Minimum control measures require a Grading Plan (showing Best Management Practices), a garbage dumpster or suitable trash collection plan, and a port-a-let.**

3.02 Small Construction Sites (between one (1) and five (5) acres):

DEQ Storm water General Permit --- LAR200000, a Storm Water Pollution Prevention Plan (SWPPP) is required for the site. A site specific SWPPP must be created, implemented, and maintained before and during construction. A copy of the SWPPP must be kept on site. Written notification of intent to be covered under this permit is not required; there is automatic coverage for sites this size. When a project is complete and the site has been properly stabilized in accordance with the permit (Part III.D.2.a.2), the owner/ operator shall submit a Completion Report form to the LDEQ.

Requirements:

1. Grading Plan (Showing Best Management Practices)

2. SWPPP – post notice at construction site noting location of SWPPP, name, phone #, LPDES Permit #, update and change plan as situations change on site

3. Submit a Completion Report to DEQ (when site has been stabilized)

3.03 Construction Sites over five (5) acres:

DEQ storm water General Permit LAR100000 Part II, the permittee is required to send a Notice of Intent (NOI) before construction begins. A site specific SWPPP must be created, implemented, and maintained before and during construction. A copy of the SWPPP must be kept on site. There is also an annual permit fee to the Louisiana Department of Environmental Quality associated with projects larger than five (5) acres. Also, a Notice of Termination (NOT) must be sent at job completion in accordance with Part VIII of this permit.

Requirements:

1. Grading Plan (Showing Best Management Practices)

2. SWPPP – post notice at construction site noting location of SWPPP, name, phone #, LPDES Permit #, update and change plan as situations change on site

3. File Notice of Intent (NOI) at least 48 hrs. prior to construction activity --- sent to DEQ

4. File Notice of Completion (NOT) – after project is complete or when area has been stabilized (70% density cover) --- sent to DEQ

END OF SECTION

SECTION 01900

ST. CHARLES PARISH DEPARTMENT OF PUBLIC WORKS
HOME-BUILDING INSPECTIONS

PART 1 - GENERAL

1.01 DESCRIPTION AND SCOPE

This work shall consist of the production of construction photographs and construction videos by the CONTRACTOR as provided herein. The OWNER's Representative (engineer) shall designate the subject of each photograph. When the proposal does not include a separate pay item for production of such photographs and videos as set forth in this section, the cost of such work shall be included in the prices bid on the Mobilization item in the Louisiana Uniform Public Work Bid form (Section SCP-E-00300).

The contractor shall submit to the engineer a list of at least three vendors he intends to use for the inspections for review and approval by the engineer and St. Charles Parish.

PART 2 - PHOTOGRAPHS

2.01 QUALITY

All photographs shall be produced by a competent photographer and shall be color photographs of commercial quality. Prints shall be mounted on linen with flap for binding or enclosed in clear plastic binders. Each print shall be marked on the reverse side with the name and number of Contract, name of CONTRACTOR, description and location of view and identity of photographer. In addition to submitting the mounted prints, an electronic copy of each print shall be submitted on read-only CD-ROM or DVD.

2.02 VIEWS AND QUANTITIES

A. Prior to any work taking place as well as mobilization the contractor shall coordinate with the Engineer and Owner to acquire access to the adjacent residential property. Once acquired and coordinated, the Contractor shall take exterior photographs and video of the adjacent residential property, including pools, mailboxes, and other structures, with emphasis placed on any existing structural damage such as the foundation and walls and those areas that may be susceptible to damage resulting from pile driving and general construction work. Interior photographs and video shall be taken only if the residential owner is agreeable to allow access. Additionally, all trees within the construction zone shall be examined for damage and shall be photographed and videoed as well as the existing driveways.

B. These photographs along with a copy of the video and picture files will be submitted to the OWNER with the CONTRACTOR's application for progress payment. Failure to submit these submittals with the pay requests will cause the payment applications to be considered incomplete, and thus, will not be processed until receipt of such materials. The same view of any pre-construction or construction activity shall be photographed and videoed again upon completion of construction activities and submitted with the CONTRACTOR's application for final Payment. The final payment application will be considered incomplete without the construction progress photographs, and the pay request will not be processed without such materials.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 02200 - SITE PREPARATION AND RESTORATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section includes all materials, labor, tools, etc., necessary for the removal and relocation or disposal of site improvements as required for the new work and as indicated on the drawings. At completion of the project, restoration of remaining site items damaged by the work to original conditions.

B. The CONTRACTOR'S attention is directed to any Soil Erosion and Sediment Control Ordinances in force in the Parish. The CONTRACTOR shall comply with all applicable sections of these ordinances.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General, Supplementary and Special Conditions of the Contract and Division 1 Specification Sections, apply to this Section.

1.3 SECTION REQUIREMENTS

A. Inspection of site: Carefully examine the premises to determine the extent of work and the conditions under which it must be done. No extra payments will be allowed for claims for additional work that could have been determined or anticipated by such inspection.

B. Protections:
Existing work – Take necessary precautions to protect existing areas of compacted fill, etc., that are to remain on this or adjacent sites from any sort of damage due to these operations.
Utilities – Support and protect any existing active sewers, water, gas, electric, telephone and similar utilities from damage due to these operations.
Removal of protections – Temporary protections shall be removed at completion of the project.
Responsibility for repair of damage – If, for any reason, damage to existing work or utilities is considered to be unavoidable, submit written notification of this before signing the Contract. In the absence of such notification, the Contractor assumes full responsibility for damage and the cost of satisfactorily repairing or replacing the damaged work.

1.4 REMOVALS

A. Paving, walks, curbs, site improvements: Where shown to be removed or required to be removed by new construction, removal shall be to earth.

1.5 CLEARING AND STRIPPING

A. Obstructions: Submit prompt notification of any existing obstruction, not specifically shown or specified to be removed, that will interfere with construction operations.

1.6 SITE AND WORK DESCRIPTION

A. Any trees removed shall be properly disposed of by the CONTRACTOR. Burning of trees will not be permitted. CONTRACTOR is to clear and grub only minimum areas, removing and disposing of trees and stumps.

B. CONTRACTOR shall not impede natural drainage patterns. Any areas overfilled by the CONTRACTOR or with drainage patterns impeded by the CONTRACTOR'S work shall be graded and repaired by the CONTRACTOR. CONTRACTOR shall perform this repair work immediately after being instructed by the ENGINEER.

C. CONTRACTOR shall not remove or damage any trees on private properties adjacent to the work site. CONTRACTOR is to backfill all holes and to fill, compact and grade the work area.

1.7 RESTORATION

A. Original Condition Record: At start of work contractor shall submit photographs and a narrative of all found defects in site improvements shown to remain, to record damage and/or defects not attributable to the work. All unrecorded damage and/or defects found in such work at completion shall be restored as specified following, with matching work of like kind to conditions originally found, and as otherwise additionally shown.

B. Earth Work: Rough grade all areas disturbed by the work beyond the boundaries of contract improvements to their original contours in accordance with Spec. Earthwork. Restore top soil, fine grade and sprig and strip sod with matching grass, and fertilize and maintain to final completion all such lawn areas in accordance with Spec. Landscape or acceptable practice. Leave all new lawns and existing lawns within the construction site and along its boundaries mowed to match owners practice at Substantial Completion.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CLEARING

A. The surface of the ground, for the area to be cleared and grubbed, (if applicable) shall be completely cleared of all trees, timber, brush, stumps, roots, grass, weeds, rubbish, and all other objectionable obstructions resting on or protruding through the surface of the ground. However, those trees which are designated by the ENGINEER shall be preserved as hereinafter specified. Clearing operations shall be conducted so as to prevent damage to existing structures and installations, and to those under construction, so as to provide for the safety of employees and others.

3.2 GRUBBING

A. Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs, and any other organic or metallic debris not suitable for foundation purposes, resting on, under, or protruding through the surface of the ground to a depth of eighteen (18) inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

3.3 STRIPPING

A. In areas so designated, topsoil shall be stockpiled. Topsoil so stockpiled shall be protected until it is placed as specified. Any topsoil remaining after all work is in place shall be stockpiled and/or spread on-site at a location designated by the Owner.

3.4 DISPOSAL OF CLEARED AND GRUBBED MATERIAL

A. The CONTRACTOR shall dispose of all material and debris from the clearing and grubbing operation by hauling such-material and debris off site. The cost of disposal (including hauling) of cleared and grubbed material and debris .shall be considered a subsidiary obligation of the CONTRACTOR; the cost of which shall be included in the contract prices for the various classes of work.

3.5 PRESERVATION OF TREES

A. Those trees which are designated for preservation .by the ENGINEER shall be carefully protected from damage. The CONTRACTOR shall erect such barricades, guards, and enclosures as may be considered necessary for the protection of the trees during all construction operations.

3.6 PRESERVATION OF DEVELOPED PRIVATE PROPERTY

A. Trees, shrubbery, gardens, lawns, and other landscaping, which in the opinion of the ENGINEER must be removed, shall be replaced and replanted to restore the construction site to the condition existing prior to construction.

B. Improvements to the land, such as fences, walls, outbuildings, and other structures which of necessity must be removed, shall be replaced with equal quality materials and workmanship.

C. The CONTRACTOR shall clean up the construction site directly after construction is completed, upon approval of the ENGINEER.

END OF SECTION 02200

SECTION 02204 - FILLING AND LEVELING PARK AREAS

PART 1 - GENERAL

1.1 SUMMARY

A. Work Included: Provide all supervision, labor, equipment, appliances and services necessary for and incidental to completing sand filling and leveling operations for the new park, in strict accordance with the Drawings and these Specifications.

B. Scope: The general scope of the leveling work is defined as the fine sand leveling within the park areas as shown on the Drawings. The work shall generally include:
   1. Application of sand on entire disturbed grassed surface (10’ min. spread).
   2. Irrigation line and heads installation (see Section 02801 - Field Irrigation System).
   3. Sodding, watering, and fertilizing (see Section 02701 - Erosion Control and Soil Stabilization).
   4. Maintenance during period of establishment (grow-in) (see Section 02701 - Erosion Control and Soil Stabilization).

1.2 QUALITY ASSURANCE

A. Control of Work: Due to the special nature of the work included in this section, the CONTRACTOR shall utilize a sub-contractor experienced in athletic field or similar close tolerance grading/planing/leveling. It is anticipated that the sub-contractor shall be responsible for the grassed areas within the park area. This shall include, but not be limited to, the filling and leveling of the new grass areas and sod installation/establishment adjacent to newly paved areas and haul route areas (side lines) damaged by construction. The sub-contractor should have the following experience:
   1. Five (5) years minimum with athletic field or closer tolerance grading/planing/ leveling construction.
   2. Operation of the following equipment necessary for the construction of the athletic fields or similar areas:
      a. Fine grading/leveling - Turf-type tractor with dual mast laser machine control (tractor must be equipped with floatation turf tires to prevent cleating of finish grade)

B. The sub-contractor for the field grading/planning/leveling work must be submitted to the ENGINEER prior to commencement of field work.

PART 2 - PRODUCTS

2.1 SAND LEVELING MATERIAL: All fill for filling and leveling of the existing fields grassed areas shall be flume sand.

2.2 IRRIGATION COMPONENTS: Refer to Section 02801 - Field Irrigation System.

2.3 SODDING AND FERTILIZING: Refer to Section 02701 -Erosion Control and Soil Stabilization.

PART 3 - EXECUTION

3.1 FILLING/LEVELING

A. Install irrigation components as required in the Contract Documents, taking care not to damage the finished grade. Backfill and compact trenches to limit settling.
B. Spread flume sand (1" thickness max. per application) and laser grade the surface using turf-type tractor with dual mast laser machine control (tractor must be equipped with flotation turf tires to prevent cleating of finish grade) using skilled experienced grading equipment operators. Drive equipment in concentric, quarter-circles and as otherwise needed to produce consistent slope and grades.
C. Roll the sand leveled field to obtain a smooth, compacted surface free from mounds, ridges, undulations, holes, etc.
D. Install sod strips as shown on the Drawings, watering as required for healthy rooting.

3.2 ACCEPTANCE OF FINISH FIELD SURFACE

A. CONTRACTOR shall be required to install sand fill and continue leveling work until no apparent ridges, mounds, undulations, holes, etc. are visible. The ENGINEER and OWNER shall individually determine the acceptability of the park area.

END OF SECTION 02204

SECTION 02221 - EXCAVATION, BACKFILLING FOR TRENCHES, PAVEMENT, AND STRUCTURES

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. 02200 Site Preparation and Restoration

1.2 DESCRIPTION

A. The CONTRACTOR shall furnish all materials, labor and equipment necessary to remove all earth, rock, water, debris, and other materials to the extent required for the construction of the improvements shown on the Drawings. Also included is the preparation of the subgrade or subbase for the foundation of the improvements and the backfilling and compaction around the improvements to the lines and grades established on the Drawings.

1.3 EXTENT OF WORK

A. Excavation shall extend to the width and depth shown on the Drawings or as specified, or where not specified, CONTRACTOR shall confine his excavation to the least width practicable and shall provide suitable room for installing pipe and appurtenances.

1.4 BEDDING AND BACKFILLING

A. The CONTRACTOR shall furnish and place all required sheeting, bracing, and supports for the installation of utilities. CONTRACTOR shall backfill trenches with pumped river sand or select excavated material, as indicated on the Drawings. The bottom of the excavation shall be firm, dry, and, in all respects, acceptable. The CONTRACTOR shall be required to deposit crushed limestone for pipe bedding in accordance with the Drawings or crushed limestone refill for excavation below grade, directly on the bottom of the trench immediately after excavation has reached the proper depth and before the bottom of the trench has become softened or disturbed by any cause whatsoever.

PART 2 - PRODUCTS

2.1 GRANULAR MATERIAL (BACKFILL)

A. Granular material known locally as “river sand” shall be used as backfill material for all trench and pit excavations within paved areas and shall be free of roots, shells, or any other foreign matter, AASHTO A-4 material or better.

2.2 CRUSHED LIMESTONE

A. Limestone used as bedding material shall be from a source approved by the LDOTD. Materials shall conform to the requirements of Section 1003.03(d) of the Louisiana Standard Specifications for Roads and Bridges, latest edition.

2.3 GEOTEXTILE FABRIC

A. The CONTRACTOR shall furnish and install geotextile fabric as shown on the plans. Geotextile fabric shall conform to Section 1019 (Type "C") of the Louisiana Standard Specifications for Roads and Bridges, latest edition.

2.4 SELECT EXCAVATED MATERIAL (BACKFILL)

A. Good sound earth free from waste, rubbish, objectionable organic matter, large rocks, waste, concrete, or other unstable or unsuitable material. This material shall be used outside paved areas or structures.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Excavation shall be open cuts with vertical sides using sheeting and bracing as required. All sheeting and bracing for excavations shall be in accordance with OSHA regulations.

B. In case the excavation for any pipeline is carried below the required depth as shown in the bedding details due to an error by the CONTRACTOR not for the purpose of removing stumps, roots, logs, etc., the CONTRACTOR shall fill and compact the bottom of the excavation up to grade with bedding material in a manner acceptable to the ENGINEER, without additional compensation for the materials, excavation, or the backfilling.

C. All material excavated shall be placed so as to minimize interference with public travel and to permit proper access for inspection of the work.

3.2 DISPOSAL OF MATERIALS

A. Excavated material shall be stocked without excessive surcharge on the trench bank or obstructing free access to hydrants and valves. Inconvenience to traffic and abutters will not be allowed. Site drainage shall be maintained at all times.

B. All excess excavated material shall be hauled and stockpiled on the site of the work by the CONTRACTOR as directed by the OWNER. The cost of hauling and disposal of excess excavated material shall be a subsidiary obligation of the CONTRACTOR, the cost of which shall be included in the contract prices for the OWNER. Disposal and hauling distances as directed by the OWNER shall be limited to a maximum fifty (50) mile radius (one-way) of the project site.

3.3 OVER-EXCAVATION TO REMOVE STUMPS, ROOTS, LOGS

A. Stumps, roots, and logs which are encountered within the trench area shall be cut to a depth of one (1) foot below the bottom of the trench. The CONTRACTOR shall fill this excavated space with compacted bedding material as described in paragraph 3.6.

B. When so required by the ENGINEER, the CONTRACTOR shall probe one (1) foot below the established bottom of the trench. If any stumps, roots, logs, etc., are discovered by this probing, the CONTRACTOR shall cut them out just as if they had been visible in the trench.

C. Blasting will not be allowed for the removal of stumps.

3.4 TEST PITS

A. Test pits for the purpose of locating underground utilities or structures in advance of the construction shall be excavated by the CONTRACTOR. Test pits shall be backfilled with compacted river sand immediately after the desired information has been obtained.

3.5 PIPE INSTALLATION

A. Proper implements, tools and facilities shall be provided and used by the CONTRACTOR for the safe and convenient prosecution of the work. All pipe, fittings, valves, and appurtenances shall be carefully lowered into the trench piece by piece by means of a derrick, ropes, or other suitable tools or equipment in such a manner as to prevent damage to materials and protective coatings and linings. Under no circumstances shall materials be dropped or dumped into the trenches.

B. All pipe, fittings, and appurtenances shall be inspected for defects and cracks prior to being lowered into the trench.

C. The outside of the spigot, the inside of the bell, and any couplings used shall be brushed and wiped clean and dry and free from all foreign matter before the pipe is joined.

D. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. During the laying operations, no debris, tools, clothing or other material shall be placed in the pipe.

E. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade. The pipe shall be secured in place with approved backfill material tamped under it as herein specified. Precautions shall be taken to prevent dirt from entering the joint space.

F. At times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the ENGINEER. This provision shall apply during the noon hour as well as overnight. If water is in the trench, the seal shall remain in place until the trench is pumped completely dry.

G. Cutting of pipes for inserting fittings or closure pieces shall be done in a neat and workmanlike manner in accordance with instructions of the pipe manufacturer and without damage to the pipe.

3.6 BACKFILLING AND BEDDING

A. As soon as practicable after the pipe has been laid, jointed, and tested, backfilling shall begin and thereafter be prosecuted expeditiously. Bedding shall conform to the details on the Drawings or as established in the specifications. When laying pipe, the groove for the pipe and bell hole must be accurately shaped, and the bedding must be closely packed under and around the pipe.

B. Bedding material shall be crushed limestone or crushed concrete placed and compacted as shown on the Drawings. The compaction of the bedding shall consist of the placement of the bedding in lifts not exceeding eight (8) inches and compacted to a minimum of 95% of the maximum dry density in accordance with ASTM D-698. The bedding and pipe shall be enclosed in a geotextile fabric. Geotextile fabrics shall be installed in accordance with the manufacturer's recommendations. All foundation lumber (i.e. planking, sills, and stringers in the trench bottom) shall be No. 2 Common Southern Pine. Installation of foundation lumber and piling shall be in accordance with the Drawings.

C. The remainder of the trench above the bedding shall be backfilled with river sand at locations where open cutting is permitted across roadways. Select excavated backfill material will be allowed for trenches outside pavement areas. Sand backfill beneath paved foundations, and other areas where indicated on the Drawings shall be placed in layers up to the bottom of the pavement base course and thoroughly compacted by flooding or by mechanical compaction equipment to 95% of maximum dry density in accordance with ASTM D-698. Maximum lifts will be no greater than eight (8) inches. The twelve (12) inches directly under non paved areas, native backfill material shall be placed in layers not exceeding 8 inches deep and compacted to 90% of the maximum dry density determined in accordance with ASTM D-698.

D. Backfill around manholes shall be treated as in paragraph C above.

E. Broken paving shall not be placed in backfill.

3.7 RESTORING TRENCH SURFACE

A. Where the trench occurs adjacent to paved streets, in shoulders, sidewalks, or in cross-country areas, the CONTRACTOR shall thoroughly compact the backfill and shall maintain the surface as the work progresses. If settlement takes place, they shall immediately deposit additional fill to restore the level of the ground.

B. The surface of any driveway or any other area which is disturbed by the trench excavation and which is not a part of the paved street shall be restored by the CONTRACTOR to a condition at least equal to that existing before work began.

C. In sections where the pipeline passes through grassed areas, the CONTRACTOR shall re-grade and seed all disturbed areas as specified in other sections or as directed by the ENGINEER.

3.8 DIRECTIONAL DRILLING

A. Directional drilling is a process or method for installing the required force mains and it is the contractor's full responsibility to provide and install this system, operational and complete.

B. Contractor is to secure each drilling pit by providing sheeting and shoring as required. They are to excavate, de-water, and maintain the pit dry while work is in progress. Proper implements, tools, and equipment shall be provided and used by the contractor for the safe and convenient prosecution of the work. The force mains and other appurtenances shall be inspected for defects prior to installation. Every precaution shall be taken to prevent foreign matter from entering the pipe. If necessary the contractor is to fill the force mains with water in order to counter the buoyant forces by providing temporary plugs.

END OF SECTION 02221

SECTION 02225 - EXCAVATION, FILLING AND GRADING

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

The Drawings and general provisions of the contract, including General and Supplementary Conditions and General Requirements (if any), apply to the Work specified in this Section.

1.2. DESCRIPTION OF WORK:

A. The extent of excavation, filling and grading is shown on the Drawings.

A. Excavating, filling and grading operations include, but are not limited to, the following:

Earthwork inside and outside structure limits.

Drainage fill.

Providing borrow material.

Finishing and dressing of graded surfaces.

Maintaining graded areas including erosion and sediment control.

Trenching and Backfilling

1.3. QUALITY ASSURANCE:

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Testing and Inspection Service:

C. Provide quality control testing by an approved independent testing laboratory during construction as necessary to assure the entire earthwork including all fill layers, subgrades and bases, meets contract requirements. Remove and reconstruct or otherwise correct work which falls below specified density or is outside other specified limits.

D. Minimum quality control testing to be provided by the Contractor consists of the following:

Moisture-density relationship curve for each type soil encountered.

One-in-place density test (ASTM D 1556 or other method approved by the Engineer) per 1000 cubic yards of fill placed.

E. Report test results in writing to the Engineer promptly (normally same day test are made).

F. The Engineer may perform sampling, surveying, inspection or testing activity during construction for his use, but such activity does not relieve the Contractor from his responsibility to achieve specified results.

G. The Owner may perform compaction check tests on work involving compaction requirements when the Contractor indicates such work meets contract compaction requirements, it is the Contractor's

responsibility to determine the extent to which the deficiency is present, to correct the deficiency, and to demonstrate by compaction tests made by an approved testing laboratory, compliance in the deficient area with contract provisions. Compaction check testing activity by the Owner does not relieve the Contractor from his responsibility to achieve specified results. All costs of retesting to demonstrate compliance with specified results are to be assumed by the Contractor. The Owner will pay all other compaction check testing costs.

1.4. SUBMITTALS

A. Test Reports:

Promptly submit written results of all tests to the Engineer.

1.5. JOB CONDITIONS

A. Site Information:

Verify existing site grades to be substantially consistent with grades shown on the Drawings before commencing work. Report any significant conflict in grades to the Engineer before proceeding.

Subsurface conditions presented, if any, are not intended as representations or warrants of continuity of such conditions between soil borings or pits. It is expressly understood that the Contractor is solely responsible for interpretations or conclusions drawn therefrom. Data is made available for the convenience of the Contractor who may perform additional test borings and other exploratory operations at his expense, provided such operations are acceptable to the Engineer.

B. Existing Utilities: Locate all existing underground utilities in the area of work including verification of nature and exact location of any utility indicated on Drawings. If utilities are to remain in place, provide adequate means of protection during earthwork operations.

Should unexpected piping or other utilities be encountered during excavation, consult the utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

Do not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.

Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies from shut-off of services if lines are active.

C. Use of Explosives:

Do not permit explosives on the project site.

D. Protection of Persons and Property:

Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.

Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

Use work methods and provide temporary facilities as necessary to prevent washing or siltation damage or hazard to persons and property, within and off the project site.

PART 2 - PRODUCTS

2.1 DEFINITIONS AND MATERIALS:

A. Satisfactory soil materials are defined as those complying with American Association of State Highway and Transportation Officials (AASHTO) M145, soil classification Groups A-1, A-2-4, A-2-5, and A-3.

Unsatisfactory soil materials are those defined in AASHTO M145 soil classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also, any highly organic soils.

B. Backfill and Fill Materials: Satisfactory soil materials free of lumps larger than 2 inches in any dimension, debris, waste, frozen materials, wood, vegetable and other deleterious matter.

C. Sand: Washed, uniformly graded natural or manufactured sand composed of hard, durable particles with 100 percent passing a No. 4 sieve, not more than 25 percent passing a No. 100 sieve, and containing no more than 25 percent total of silt and clay.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Excavation consists of removal and disposal of material encountered when establishing required grade elevations, and includes removal and disposal of natural materials, pavements and other obstructions on ground surface, underground structures and utilities indicated to be demolished and removed, and other materials encountered which are not indicated or required to be retained.

B. Borrow excavation consists of the removal and utilization of approved materials from authorized areas. Obtain and use borrow only when there is an insufficient quantity of suitable material derived from project earthwork operations to complete earthwork and site grading and when authorized by the Engineer.

C. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer. Unauthorized excavation, as well as remedial work directed by the Engineer, shall be at the Contractor's expense.

D. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise requested by Engineer.

E. Additional Excavation: When excavation has reached required subgrade elevations, notify the Engineer who will make an inspection of conditions.

F. If unsuitable bearing materials are encountered at the required subgrade elevations, carry excavations deeper and replace the excavated material as requested by the Engineer.

G. Stability of Excavations: Slope sides of excavations as required.

H. Maintain sides and slopes of excavation in a safe condition until completion of backfilling.

I. Dewatering: Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding areas.

Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain dewatering system components necessary to convey water away from excavations.

Convey water removed from excavations and rain water to run-off areas. Establish and maintain temporary drainage swales and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.

J. Material Storage: Stockpile satisfactory excavated materials where authorized until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.

Locate and retain materials away from edge of excavations.

Dispose of excess soil material and waste materials, such as unsatisfactory excavated soil material, trash and debris, as specified hereinafter.

When select excavated materials are indicated on the Drawings for use in constructing fills or backfills, perform operations, including stockpiling and rehandling, as necessary to assure use of the most desirable materials at intended locations.

K. General Excavation: Conform to elevations and dimensions shown.

For areas designated for spreading of topsoil, carry excavation a uniform depth below finished grade by an allowance appropriate to attainment of required finished grade after placement of topsoil.

L. Excavation for Pavements: Undercut finished pavement lines to comply with cross-sections, elevations and grades as shown.

M. Excavation for Channels: Cut channels, ditches and swales to shape and grades as shown. Deposit excavated materials a sufficient distance from the edge of channels and ditches to prevent cave-ins or material falling or sliding into excavation. Keep all waterways free of obstructions, debris and siltation until final acceptance.

N. Excavation for Trenches: Dig trenches to the uniform minimum width required to properly install the particular item. For sewer lines, confine trench width from al elevation of one foot above top of pipe to the trench bottom, to that absolute minimum which is necessary for pipe laying operations, but do not exceed maximum trench width determined by foundation and pipe strength limitations.

Excavate trenches to the depth indicated or required. Carry the depth of trenches for piping as appropriate for indicated flow lines and invert elevations.

Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for the entire body of the pipe.

Do not backfill trenches until tests and inspections have been made and backfilling authorized by the Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.

3.2 COMPACTION

A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification.

B. Percentage of Maximum Density Requirements: Achieve not less than the following percentages of maximum density of soil material compacted at optimum moisture content, for each layer of soil material-in-place as determined by ASTM D 698 (Standard Proctor) test procedures:

C. Berms and Liquid Holding Fills: Compact each layer of backfill or fill material to 95 percent of maximum dry density.

D. Lawn or Unpaved Areas: Compact each layer of backfill or fill material to 85 percent of maximum dry density.

E. Walkways: Under and within two feet horizontal distance of paved walks, compact top six inches of subgrade and each layer of backfill or fill material to 95 percent of maximum dry density.

F. Pavements: Under and within entire roadbed, compact top 12 inches of subgrade and each layer of backfill or fill material to 95 percent of maximum dry density.

G. Spoil Areas: Compact each layer of backfill or fill material to 85 percent of maximum dry density.

H. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.

Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

3.3 BACKFILL AND FILL

A. General: Place acceptable soil material in layers, to required subgrade or finish grade elevations. Backfill excavations as promptly as work permits.

B. Backfill and Fill Materials: Unless other material is indicated, use satisfactory soil material for backfill and fill, free of stumps, trees, roots, sod, muck, trash and other deleterious matter.

C. Handle, conserve, store and place excavated material to provide least desirable acceptable material at the bottom of fills and backfills, and grade up to the best material at the top.

D. Prior to Backfill Placement: Backfill excavations as promptly as work permits, but not until completion of the following where applicable:

Removal of trash and debris.

E. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break-up sloped surfaces steeper than one vertical to four horizontal so that fill material will bond with existing surface.

F. When existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to required depth and percentage of maximum density.

G. Placement and Compaction: Place backfill and fill materials in layers not more than 12 inches in loose depth. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content. Compact each layer to required percentage of maximum density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

Place backfill and fill materials in uniform layers to required elevations. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around structure to approximately same elevation in each lift.

3.4 GRADING

A. General: Uniformly grade areas within limits of earthwork, including adjacent transition areas. Smooth and compact finished surface within specified tolerances, with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

B. Grassed or Landscaped Areas: Finish areas to within not more than 0.10 feet above or below the required elevations.

C. Walks and Pavements: Shape surface of areas under walks and pavements to line, grade and cross-section, with finish surface not more than 1/2 inch above or below the required subgrade elevation.

D. Compaction: After grading, compact subgrade surfaces to the depth, percentage of maximum density, and elevation tolerance for each area classification.

3.5 MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion, and keep free of trash and debris.

Repair and re-establish grades in settled, eroded, and rutted areas to specified compaction and tolerances.

B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction, adverse weather or other cause, scarify surface, re-shape, and compact to required density prior to further construction.

3.6 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Disposal of Excess Excavation: Transport excess excavated material, including unsatisfactory soil material, to any designated spoil areas, and spread as specified; otherwise remove from the Owner's property and construction site, and legally dispose of such material.

B. Disposal of Waste Material: Remove trash, debris, garbage, and waste materials to designated spoil areas, if any. Spread material in layers approximately one foot thick and compact. Do not place waste material within two feet of finished grade.

If no spoil areas are designated, remove waste materials from Owner's property and legally dispose of such material.

END OF SECTION 02225

SECTION 02230 - SITE CLEARING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Includes all labor, materials, equipment, etc., for all site clearing work and related items necessary for structures, roadways and parking, yard areas, drainage, and treatment of grade and sub-grade. All as indicated on the drawings and included in these specifications.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General, Supplementary, and Special Conditions of the Contract and Division 1 Specification Sections, apply to this Section.

1.3 SUMMARY

A. This Section includes the following:
   1. Stripping and removal of topsoil.
   2. Removal of sugarcane stubble, roots, and other vegetation.
   3. Clearing and grubbing.

1.4 INSPECTION OF THE SITE

A. Contractors are responsible for inspecting the site prior to submission of their bid, and take into consideration the existing conditions thereon in preparation of the bid. No additional payments will be made for unforeseen irregularities which may arise because of the failure to do this.

1.5 PROJECT CONDITIONS

A. **Traffic** Conduct site-clearing operations to ensure minimum interference with roads, field drainage, and operations on adjacent property. Do not close roads or ditches without permission from authorities having jurisdiction.
B. **Protection of Property** Protect improvements on adjoining properties and on Owner's property. Restore damaged improvements to their original condition, as acceptable to property owners.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 LAYOUT

A. Contractor shall lay out work in accordance with paragraph 1A.9. Report any error in consistencies to the Engineer.

3.2 STRIPPING TOP SOIL AND GRUBBING

A. Remove (strip) vegetation, topsoil, roots, stumps, sugarcane stubble, debris, wet and unsatisfactory soil materials, obstructions, deleterious materials, and other organic matter from the areas to be covered by building, roadways, parking, walks, and areas to receive Treatment of sub-grade. Surface growth shall be removed before stripping.

B. Area under building, drives, and parking that is located in existing sugar cane field, soil shall be stripped a minimum of 12" from the bottom of the cane rows. In no case shall roots, sugarcane stubble, debris, wet and unsatisfactory soil materials remain in building area. Stockpile in storage piles to provide free drainage of surface water on site at rear of property. This soil may be used for top soil for fine grading after vegetation and debris are removed.

C. Area under building, drives, and parking that is not located in existing sugar cane field, soil shall be stripped a minimum of 6". Stockpile top soil free from sugarcane stubble separately from other materials and saved for fine grading around building area. Stockpile in storage piles to provide free drainage of surface water on site on site at rear of property. This soil may be used for top soil for fine grading after vegetation and debris are removed.

D. The stripping should extend laterally two feet beyond the location shown on the drawings for the contour line.

E. The exposed sub-grade shall be approved by an on-site geotechnical representative.

F. Top soil is defined as friable clay loam surface soil found in a depth of not less than 6 inches. Satisfactory top soil is free of subsoil, clay lumps, stone, and other objects, and without weeds, roots, and other objectionable material.

G. Prior to using for fine grading remove remaining vegetation and debris from top soil.

3.3 DISPOSAL OF WASTE MATERIALS

A. Transport unsuitable topsoil materials to designated spoil areas on Owner's property and/or dispose of as directed.

3.4 PROOF ROLLING OF EXPOSED SUBGRADE FOR WEAK AREAS

A. Once the final cut grade is obtained, the exposed subgrade shall be proof-rolled with a fully loaded dump truck or an equivalent heavy wheeled vehicle to identify soft or weak zones. At least two (2) complete passes shall be made over the area. The second pass is to be made perpendicular to the first pass. Weak or soft materials observed during proof-rolling shall be removed and replaced with properly compacted borrow material. Material removed shall be spread on the site (where fill is not to be placed) as directed by the Owner's representative.

B. Payment for materials removed and replaced with borrow material shall be at the contract unit price for "Remove and Replace Unsatisfactory Soil". After the unsatisfactory soil material has been removed, the Contractor shall measure (using

appropriately spaced cross-section) in the presence of the Owner's representative, the void to be filled with borrow material. The volume computes from these cross sections based on the average end area method shall be the basis for payment.

3.5 SAFETY PRECAUTIONS

A. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights for safety precautions.
B. Operate warning lights as recommended by authorities having jurisdiction where needed for safety precautions.

END OF SECTION 02230

SECTION 02300 - ALUMINUM ORNAMENTAL FENCE SYSTEM

PART 1 – GENERAL

1.1 WORK INCLUDED

A. The contractor shall provide all labor, materials, and all necessary items for the installation of the Echelon Plus ornamental aluminum fence system defined herein at the West Bank Bridge Park.

1.2 RELATED WORK

A . 02221 - Excavation, Backfilling for Trenches, Pavement, and Structures
B. 03300 - Cast-In-Place Concrete

1.3 SYSTEM DESCRIPTION

A. The manufacturer shall supply a total ornamental aluminum fencing system of the Ameristar Echelon Plus Majestic 4 Rail with Puppy Panel design or equal. The system shall include all components (i.e., pickets, posts, rails, gates, and hardware) required.

1.4 QUALITY ASSURANCE

A. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and the materials specified.

1.5 REFERENCES

A. ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
C. ASTM D523 - Test Method for Specular Gloss.
D. ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
E. ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
F. ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
G. ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
H. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
I. ASTM D6695 – Standard Practice for Xenon-Arc Exposures of Paint and Related Coatings
J. IBC 2018 1607.8.1 Handrails and Guards

1.6 SUBMITTAL

A. The manufacturer's submittal package shall be submitted prior to installation to confirm compliance with all requirements for materials specified in this section.

1.7 PRODUCT HANDLING AND STORAGE

A. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage and to protect against damage, weather, vandalism and theft.

PART 2 – MATERIALS

2.1 MANUFACTURER

A. The ornamental fence system shall conform to Ameristar's Echelon Plus aluminum ornamental fencing, Majestic Puppy, 4-rail style manufactured by Ameristar Perimeter Security USA Inc. in Tulsa, Oklahoma or equal.

2.2 MATERIAL

A. Aluminum material for fence framework (i.e., tubular pickets, rails and posts) shall conform to the requirements of ASTM B221. The aluminum extrusions for posts and rails shall be Alloy and Temper Designation 6005-T5. The aluminum extrusions for pickets shall be Alloy and Temper Designation 6063-T52.

B. Pickets shall be 3/4" square x .045" thick. Horizontal rails shall be 1-1/4" x 1-7/16" Forerunner™ profile with .090" top wall, .060" internal web, and .110" side walls. Forerunner rails shall be punched to accept pickets. The rail shall be constructed with an internal web providing a raceway for the pickets to be retained with a 1/8" retaining rod. The number of rails shall vary with the style, height and strength as determined by manufacturer. Fence posts and gate posts shall meet the minimum size requirements of Table 1.

C. Accessories: Aluminum castings shall be used for all post caps, scrolls, finials, and other miscellaneous hardware. Hinges and latches shall be fabricated from aluminum, stainless steel or composite materials.

2.3 FABRICATION

A. Pickets, rails and posts shall be pre-cut to specified lengths. ForeRunner rails shall be pre-punched to accept pickets. Grommets shall be inserted into the pre-punched holes in the rails and pickets shall be inserted through the grommets so that pre-drilled picket holes align with the internal upper raceway of the ForeRunner rails (Note: This can best be accomplished by using an alignment template). Retaining rods shall be inserted into each ForeRunner rail so that they pass through the pre-drilled holes in each picket, thus completing the panel assembly. Panels without rings shall be biasable up to a 12% change in grade.

B. The manufactured framework shall be subjected to the Ameristar thermal stratification coating process (high-temperature, in-line, multi-stage, and multi-layer) including, as a minimum, a six-stage pretreatment/wash and an electrostatic spray application of a polyester finish. The topcoat shall be a “no-mar” TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color shall be Black. The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 2.

B. Finish: All fence components shall be subject to a six-stage pretreatment/wash followed by an electrostatic spray application of a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2-4 mils. The color shall be Black.

C. Classic, Majestic, Genesis & Warrior styles with 3 & 4-rail configurations as well as 4-rail Puppy panel styles shall meet IBC compliance. Panel, post and bracket assemblies shall be subjected to structural performance testing according to Chapter 17 – Structural Tests and Special Inspections – International Building Code (IBC) 2018. Physical testing to be completed by accredited third party testing facility. Completed assembly shall demonstrate loading capacity of 2.5 times prescribed design loads found in section 1607.8.1, 1607.8.1.1 and 1607.8.1.2 of IBC 2018 for Handrails and Guards. IBC compliant fence system requirements detailed within Table 4.

D. Swing gates shall be fabricated using 1-1/4" x 1-7/16" Forerunner rail, 1.75” sq. x .125” gate ends, and 3/4” sq. x .080 pickets. Gates that exceed 6’ in width will have a 1.75” sq. x .125” intermediate upright. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall also be joined by welding.

PART 3 – EXECUTION

3.1 PREPARATION

A. All new installation shall be laid out by the contractor in accordance with the construction plans.

3.2 FENCE INSTALLATION

A. Fence post shall be spaced according to Table 3, plus or minus ½”. For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be set in concrete footers of sufficient depth and diameter to meet project specific requirements and conforms to any federal, state, and/or local codes. The “Earthwork” and “Concrete” sections of this specification shall govern material requirements for the concrete footer. Posts setting by other methods such as plated posts or grouted core-drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application.

3.3 FENCE INSTALLATION MAINTENANCE

When cutting/drilling rails or posts adhere to the following steps to seal the exposed surfaces:

A. Remove all metal shavings from cut area.
B. Apply custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1 & 2 above will negate warranty. Manufacturer’s approved spray cans or paint pens shall be used to

finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of parts or components not approved by the manufacturer may negate the manufactures' warranty.

3.4 GATE INSTALLATION

A. Gate posts shall be spaced according to the manufacturers' gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles. The manufacturers' gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacture of the gate and shall be installed per manufacturer's recommendations.

3.5 CLEANING

A. The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

Table 1 – Minimum Sizes for Echelon Plus Posts

Fence Posts	Panel Height		
2-1/2" x 2-1/2" x .060" w/ reinforced web	Up to 6' Height		
Gate Leaf	Gate Height		
	Up to & Including 4'	Over 4' Up to & Including 5'	Over 5' Up to & Including 6'
Up to 4'	2 1/2" x 2-1/2" x .060" Alum.	3" x 3" x .120" Alum.	4" x 4" x .250" Alum. or 3" x 3" x 12ga. Steel
4'1" to 6'	3" x 3" x .120" Alum.	4" x 4" x .250" Alum. or 3" x 3" x 12ga. Steel	3" x 3" x 12ga. Steel
6'1" to 8'	4" x 4" x .250" Alum. or 3" x 3" x 12ga. Steel	4" x 4" x 11ga. Steel	4" x 4" x 11ga. Steel

Table 2 – Coating Performance Requirements

Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117 & D1654	Corrosion Resistance over 1000 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822, D2244, D523 (60˚ Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

Table 3 – Echelon Plus – Post Spacing By Bracket Type					
Span	8’ Nominal (91-3/4” Rail)				
Post Size	2-1/2”	2-1/2”	3”	2-1/2”	3”
Bracket Type	Echelon Plus Line Boulevard (ABB3)	Echelon Plus Swivel* (ABB2)		Echelon Plus Flat Mount (ABB1)	
Post Settings ± 1/4” O.C.	95”	*95”	*95-1/2”	95”	95-1/2”
Span	6’ Nominal (73-1/16” Rail)				
Post Size	2-1/2”	2-1/2”	3”	2-1/2”	3”
Bracket Type	Echelon Plus Line Boulevard (ABB3)	Echelon Plus Swivel* (ABB2)		Echelon Plus Flat Mount (ABB1)	
Post Settings ± 1/4” O.C.	76-1/4”	*76-1/4”	*76-3/4”	76-1/4”	76-3/4”
*Note: When using ABB2 swivel brackets on either or both ends of a panel installation, care must be taken to ensure the spacing between post and adjoining pickets meets applicable codes. This will require trimming one or both ends of the panel.					

Table 4 – Echelon Plus – IBC Compliant System Requirements				
Panel Options		**Post Options**		**Brackets Options**
Styles	*Rail Configuration*	*Aluminum Post Options*	*Steel Post Options*	Line Boulevard Brackets
Monarch	2-Rail	3” SQ x .125 wall	3” SQ x 12ga. & 4” SQ x 12ga.	End Boulevard Brackets
Classic	3-Rail & 4-Rail	2.5” SQ x .060 wall w/ internal web		Corner Boulevard Brackets
Majestic		3” SQ x .125 wall		*Flat Mount Brackets
Genesis		Post Plate Options (anchorage by others)		*Note: Flat Mount Brackets require a thru-bolt installation
Warrior		8” x 8” x 3/8” – for 2.5” posts / (Monarch) 3” posts		
Puppy Panel	4-Rail	10” x 10” x 3/8” – for 3” posts		
Panel, post, and bracket assemblies shall be subjected to structural performance testing according to Chapter 17 - Structural Tests and Special Inspections - International Building Code (IBC) 2018. Physical testing to be completed by accredited third party testing facility. Completed assembly shall demonstrate loading capacity of 2.5 times prescribed design loads found in section 1607.8.1, 1607.8.1.1 and 1607.8.1.2 of IBC 2018 for Handrails and Guards.				

END OF SECTION 02300

SECTION 02400 - TRENCH SAFETY SYSTEM

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 – GENERAL

1.1 SUMMARY

A. This item is for furnishing all labor and materials for installation and maintenance of a trench safety system.

B. For any trench excavation in materials other than solid rock, greater than five (5) feet in depth, or where shown on the plans, the contractor shall provide a trench safety system. This trench safety system shall be in accordance with the appropriate requirements established in the Occupational Safety and Health Administration (OSHA), Safety and Health Regulations, Part 1926, Subpart P - "Excavations, Trenching and Shoring" (latest edition).

1.2 MEASUREMENT

A. Measurement of the "Trench Safety System" for gravity pipelines and boxes and for pressure pipelines shall be made by the linear foot of trench measured along the centerline of the trench.

1.3 PAYMENT

A. No separate measurement or payment will be made for materials and labor performed under this section. Include all costs in the lump sum price.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 02400

SECTION 02510 - SITE WATER DISTRIBUTION PIPING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Pipe and fittings for site water lines including domestic water lines.

B. Valves, Backflow Preventers and Fire Hydrants

1.2 RELATED REQUIREMENTS

A. Section 31 23 00 Excavation, Backfilling for Trenches, Pavement, and Structures.

B. Section 33 05 23 Horizontal Directional Boring.

1.3 REFERENCES

A. AWWA C223 – Fabricated Steel and Stainless Steel Tapping Sleeves; 2013

B. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Transmission and Distribution; American Water Works Association; 2007 (ANSI/AWWA C900/C900a).

C. AWWA C901 - Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. (13 mm) Through 3 In. (76 mm), for Water Service; American Water Works Association; 2008.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with municipality requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store valves in shipping containers with labeling in place.

PART 2 – PRODUCTS

2.1 WATER PIPE

A. PVC Pipe: AWWA C900 Class 100:

1. Fittings: AWWA C901, molded or fabricated.

2. Joints: Compression.

B. Polyethylene Pipe: AWWA C901:

1. Fittings: AWWA C111, cast iron.

2. Joints: ASTM D3139 Compression gasket ring.

2.2 VALVES

A. Gate Valves 3 Inches and Over:

1. AWWA C500, iron body, bronze trim, non-rising stem with square nut, single wedge, flanged ends, control rod, valve key, and extension box.

B. Ball Valves Up To 2 Inches:

1. Brass body, teflon coated brass ball, rubber seats and stem seals, Tee stem pre-drilled for control rod, AWWA inlet end, compression outlet with electrical ground connector, with control rod, valve key, and extension box.

2.3 HYDRANTS

A. Hydrants: Type as required by the water utility company. Coordinate requirements with Utility Provider.

1. AWWA C502.

2. Extensions: Fabricate in multiples of 6 inches with rod and coupling to increase barrel length.

3. Hose and Streamer Connection: Match sizes with utility company, two hose nozzles, one pumper nozzle.

4. Finish: Primer and two coats of enamel in the color required by the utility company.

2.4 BACKFLOW PREVENTER

A. Backflow Preventer: AWWA C510 Double Check Valve Assemblies consisting of a bronze (1/2 to 2 in) body construction. Service of all internal components shall be through a single bronze or stainless steel access cover secured with stainless steel bolts. Assembly shall include two integral resilient seated isolation valves and four top mounted resilient seated test cocks. Check with local inspection authorities for installation requirements. Maximum Working Pressure: 175psi.

B. Recessed Box: Provide a recessed box for the installation of the backflow preventer below grade. Box shall meet the requirements below and be fabricated large enough to house the backflow preventer, ball valve and elbow fittings to accommodate the vertical offset with ample room for access to operate, inspect, service or remove and replace the backflow preventer unit. The box shall be site a top 12” #610 limestone.

2.5 ACCESORIES

A. Tapping Sleeves: AWWA C223, working pressure of 200 psi, Brass body, teflon coated brass ball, rubber seats and stem seals, Tee stem pre-drilled for control rod, AWWA inlet end, compression outlet with electrical ground connector, with control rod, valve key, and extension box.

B. Concrete for Thrust Restraints; Refer to requirements for Section 32 13 13.

C. Limestone Bedding: Graded #610

D. Valve Boxes:

1. Valve boxes shall be plastic, rated for pedestrian loadings and UV stabilized.

2. Valve box covers shall be secured using at least two (2) hex bolts.

2.5 BEDDING AND COVER MATERIALS

A. Bedding, Pipe: As specified in Section 31 23 16.13.

B. Bedding, Valves, Fire Hydrants and Valve Boxes: 12” Compacted #610 Limestone.

C. Cover: As specified in Section 31 23 16.13.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that building service connections and municipal utility water main size, location, and invert are as indicated.

3.2 PREPARATION

A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare pipe connections to equipment with flanges or unions.

3.3 TRENCHING

A. See Section 31 23 00 for additional requirements.

B. Hand trim excavation for accurate placement of pipe to elevations indicated.

C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.4 BORING

A. See Section 33 05 23 Horizontal Directional Boring for additional requirements.

B. The water distribution pipe shall be bored at all locations unless otherwise shown in the plans.

3.5 INSTALLATION – PIPE

A. Establish elevations of buried piping to ensure not less than 3 ft of cover.

B. Install pipe to indicated elevation to within tolerance of 5/8 inches.

C. Route pipe in straight line.

D. Install pipe to allow for expansion and contraction without stressing pipe or joints.

E. Slope water pipe and position drains at low points.

3.6 INSTALLATION - VALVES AND HYDRANTS

A. Set valves on solid bearing.

B. Center and plumb valve box over valve. Set box cover flush with finished grade.

3.7 SERVICE CONNECTIONS

A. Provide water service to utility company requirements with tapping sleeves and backflow preventer in the locations shown on the plans.

B. Install the tapping sleeve in accordance with the manufacturer's instructions.

C. Backflow preventers shall be installed at 12 inches below grade and bedded on 12" #610 limestone.

END OF SECTION 02510

SECTION 02530 - SITE SANITARY SEWER PIPING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Sanitary sewer piping, fittings, and accessories.

B. Connection of building sanitary drainage system to municipal sewers.

C. Cleanout Access.

1.2 RELATED REQUIREMENTS

A. Section 31 23 00 Excavation, Backfilling for Trenches, Pavement, and Structures.

B. Section 33 05 23 Horizontal Directional Boring.

1.3 DEFINITIONS

A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.

1.4 REFERENCE STANDARDS

A. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity- Flow Applications; 2011.

B. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings; 2005.

PART 2 – PRODUCTS

2.1 SEWER PIPE MATERIALS

A. PVC Pipe

1. Gravity Sewers: Plastic pipe for gravity sewers, stacks and laterals, and fittings shall be unplasticized polyvinyl chloride (PVC), meeting or exceeding ASTM Specification D3034 latest edition, Classification SDR 35. Pipe lengths shall not exceed 20 feet and provisions shall be made at each joint to accommodate expansion and contraction. All pipe and fittings shall be joined by means of an integral wall bell and spigot and sealed with a rubber gasket. This joint shall be capable of withstanding an internal hydrostatic pressure of 25 psi for one hour with no leakage.
   a. Pipe shall be retained in shipping cradles when stored along the right-of-way until pipe is ready to be laid. In no case will removal of pipe from cradles be permitted more than 24 hours in advance of installation.
   b. PVC pipe shall be installed in accordance with ASTM D2321, latest edition. If there is a conflict between the provisions of ASTM D 2321 and the Project Specifications, the Project Specifications shall govern this conflict. Deflection of PVC pipe after installation and backfill shall not exceed 5 percent. Pipe found to be deflected more than five percent

shall be replaced at the Contractor's expense.

2. Force Main Pipe: PVC pipe for force mains shall be provided as shown on the plans. PVC pipe shall conform to the requirements of AWWA C900, standard for pressure pipe with cast iron pipe outside diameter. Color of the pipe cannot be blue. Pipe shall be a minimum Class 150 with a standard dimension ratio of 18 or heavier.
   a. For pipe diameters less than four inches, PVC pipe shall conform to the requirements of ASTM D2241 for pressure pipe with iron pipe outside diameter. Pipe shall be a minimum Class 200 for ASTM D2741. Adequate connections on the list of approved materials shall be provided when transition from minimum class 200 to ductile iron.
   b. Pipe joints shall be integral bell and spigot type with rubber ring sealing gasket. The pipe bell shall be designed to be at least as strong as the pipe wall. Standard lengths shall be 20 feet except that 15% of total footage for a particular project may be random lengths of not less than 10 feet each. Each piece of pipe shall be tested by the manufacturer to 600 psi for a minimum of five seconds. The bell shall be tested with the pipe.
3. All sanitary sewer PVC pipe shall be either green or white in color with tracer wire included.
4. Fittings for PVC Pipe: Fittings for PVC pipe shall be made of ductile iron conforming to ANSI/AWWA C110/A21.10. Ductile iron fittings shall be as specified for ductile iron pipe and shall be restrained. Fittings shall be provided with a transition gasket specifically designed to accommodate the outside diameter of the PVC force main. Also certified test results detailing that fittings meet or exceed these Specifications shall be provided. Tapping saddles shall be used for insertion of corporation stops or other outlets for testing of force mains.

B. High Density Polyethylene (HDPE)
1. HDPE pipe for sewer applications shall have a green stripe. Pipe shall be made from high density polyethylene resin compound which meets ASTM D1248. Pipe shall be on the Owner's list of materials and approved manufacturers. Dimensions and workmanship shall conform to ASTM F714.
2. Polyethylene pipe shall be the nominal pipe size and dimension ratio shown on the plans, or in the proposal. Unless field conditions dictate a heavier wall thickness, SDR 17 shall be used. Installation shall be in accordance with ASTM D2321 or as modified herein.
3. Shipping lengths of pipe shall be assembled into one continuous length at the job site by thermal butt-fusion. Fusion machine and fusion machine operator shall be approved by pipe manufacturer. The resultant joint shall be as strong as the intervening lengths.
4. Jointing of pipe and installation of outlets shall be in accordance with the pipe manufacturer's written recommendations. The pipe manufacturer shall provide the services of a trained representative to instruct the Contractor's forces in the proper techniques for jointing of pipe and the installation of outlets or other items.
5. Contractors shall provide written certification from the manufacturer that the personnel performing the joint welding has received proper training for the welding of the manufacturers piping material.
6. Installation of polyethylene pipe in areas where flotation is probable whether on land or a subaqueous location installation shall conform to manufacturer's recommendation.
7. Polyethylene pipe shall not be crimped in any way during construction.

8. Fabricated polyethylene bends shall be manufactured by pipe manufacturer. SDR of fabricated polyethylene bends shall be equal to SDR of connecting pipe.
9. All mechanical connections shall use Harvey Adapters or an equivalent type approved by owner. No mega lugs to be used on HDPE pipe.
10. Deflection of polyethylene pipe after installation and backfilling shall not exceed 5 percent.

C. Marking for PVC & HDPE Pipe
1. Marking for PVC/HDPE pipe shall be provided for all PVC/HDPE force mains and shall be marked in accordance with both items below:
a. Tracer Wire: All PVC/HDPE pipe shall be marked using a 12 gauge insulated copper wire and have a green coating placed six inches over top of pipe. It is the intent of this paragraph to provide means to locate PVC pipe using standard pipe location equipment. The wire shall be carried up through all valve boxes and lateral stub outs and terminated at least 2 feet above the ground line to permit connecting of location equipment. Excess wire at valve boxes shall be neatly rolled and stored in the valve box. Valve boxes for termination of wire shall be placed approximately every 750 linear feet along force main or as directed by the Owner.
b. Marking Tape: Shall be green with imprint "Caution: Buried Sewer Line Below," buried at least 15 inches above the top of the pipe and shall be green in color. Tape shall be 3 inches wide minimum, made of an inert plastic film resistant to alkalis, acids or other destructive chemical components likely to be encountered in soils. The pipe trench shall be backfilled to approximately 15 inches above top of the pipe and the tape shall then be placed flat with imprint up. Backfill shall be carefully placed to a depth of six inches over tape. It is the intent of this Paragraph to provide a means of identifying and protecting force mains. Marking tap used with PVC/HDPE for mains shall be metalized so that the PVC/HDPE pipe can be located using standard pipe location equipment.

2.2 MANHOLE CONNECTIONS

A. Existing manholes cored for each pipe cutout shall be fitted with a Link Seal. The Link Seal shall be installed in the manhole wall in accordance with the manufacturer's recommendations. Use of a PVC sleeve for installation of a link seal shall not be used. A sleeve specifically designed to be grouted into the core shall be approved by the engineer and owner before being used. The Harrington Corporation Sewer Manhole Adapter, or equivalent, is the preferred adapter for St Charles Parish.

B. In every instance where pipe enters or leaves a manhole, especially when reusing existing cores, a fitting shall be provided which will accommodate expansion and contraction of the pipe, release strain on the pipe (caused by differential settlement between pipe and manhole) and provide a rubber ring water seal between pipe and adapter. The adapter shall be of a design that it can be grouted into the exiting core. Where indicated fittings shall also be provided for stubouts for future connections and stubout shall be sealed with PVC plug. The Harrington Corporation Sewer Manhole Adapter, or equivalent, is the preferred adapter.

C. Existing pipes requiring a doghouse manhole or a cast in place manhole shall be supplied with a waterstop gasket connector. The connector shall be secured to the pipe with a stainless steel clamp. The clamp shall be tightened to 60 inch pounds of torque or as

required by the manufacturer. The connector shall be cast in or sealed with non-shrink grout or an approved equal. The connector shall be installed in accordance with the manufacturer's recommendations.

D. Connections to fiberglass manholes will have a fiberglass sleeve properly attached to manhole.

E. All connectors shall be sized specifically for the pipe material, pipe size, and manhole size being used.

2.3 BEDDING AND COVER MATERIALS

A. Pipe Bedding Material: Structural fill as specified in Section 31 23 00.

B. Pipe Cover Material: Structural fill as specified in Section 31 23 00.

PART 3 – EXECUTION

3.1 GENERAL

A. Perform work in accordance with applicable code(s).

3.2 TRENCHING

A. See Section 31 23 00 for additional requirements.

B. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.3 BORING

A. See Section 33 05 23 Horizontal Directional Boring for additional requirements.

B. The sewer force main shall be bored from the lift station to the sewer manhole tie-in.

3.4 INSTALLATION – PIPE

A. Install pipe, fittings, and accessories in accordance with the specifications and manufacturer's instructions, whichever is more stringent. Seal watertight.

B. Plastic Pipe: Also comply with ASTM D2321.

C. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.

D. Connect to building sanitary sewer outlet and municipal sewer system, through installed sleeves.

3.5 INSTALLATION – CLEANOUTS

A. Form bottom of excavation clean and smooth to correct elevation.

B. Form and place cast-in-place concrete base pad, with provision for sanitary sewer pipe end sections.

C. Establish elevations and pipe inverts for inlets and outlets as indicated.

D. Mount lid and frame level in grout, secured to top cone section to elevation indicated.

E. Lid and Frame: Cast iron construction, hinged lid.
   1. Nominal Lid and Frame Size: Min. 12 inches. Adjust depending on pipe size.

END OF SECTION 02530

SECTION 02701 - EROSION CONTROL AND SOIL STABILIZATION

PART 1 – GENERAL

1.1 SCOPE

A. This Section covers the installation of erosion control and soil stabilization materials consisting of temporary seeding, permanent sodding, Hydroseeding, and fertilizing in disturbed or designated areas. Refer to Drawings for limits of sodding and hydroseeding.

1.2 REFERENCE STANDARD

A. Work shall conform to the following Sections of the State of Louisiana, Department of Transportation and Development, Standard Specifications for Roads and Bridges, 2016 Edition; except as modified herein:
Section 714 – Sodding
Section 718 – Fertilizer and Agricultural Lime
All references made therein to Measurement and Payment are deleted.

1.3 SUBMITTALS

A. Submittals shall be provided in accordance with the Contract Documents.

1.4 PLANTING TIME

A. Place lawns during normal planting seasons of the project locale. If project finish out occurs during weather conditions that are not suitable to planting, planting shall be deferred until suitable and sustained weather conditions exist. This deferment shall have no effect on the substantial completion of other work.

1.5 REPLACEMENT PROVISIONS

A. Lawns: Warrant lawns until the date of acceptance at the end of the specified maintenance period.
B. Replace unsatisfactory landscape materials (those dead or lacking vigor) with healthy, vigorous materials. Plant only during next occurring specified planting season.

1.6 MAINTENANCE

A. Maintain lawns from immediately after planting until the latest of: substantial completion of the project, or 60 days after date when hydroseeding is substantially complete, or until an acceptable lawn is established.

PART 2 - PRODUCTS

2.1 GENERAL

A. Materials related to erosion control and soil stabilization shall conform to the following subsections of the Reference Standard:
1. Sodding …… Tiffway 419 Bermuda
2. Seed …… Tiffway 419 Bermuda
3. Water ……. 714.07

4. Fertilizer …… 1018.16
5. Agricultural Lime ……. 1018.17

B. Topsoil:
1. Provide friable clay loam surface soil.
2. Satisfactory Topsoil: Fertile agricultural soil, typical for locality, capable of sustaining vigorous plant growth; free of subsoil, rocks larger than 2" in diameter, clay, toxic mater, plants, weeds and roots.
3. Unsatisfactory Soil Material: silty soils, clayey soils, peat.

PART 3 - EXECUTION

3.1 GENERAL

A. The CONTRACTOR shall neatly dress and prepare areas designated for erosion control work as specified in the appropriate sections of these Specifications.
B. Prepare only those areas that will be planted presently.
C. Preparation of stripped areas: Till subgrade to a depth of at least two inches (2").
D. Fine-grade, roll, rake and drag lawn areas cutting down high spots and filling low spots, leaving a smooth, even surface of fine-textured soil complying with required grades.
E. The CONTRACTOR shall be required to furnish and apply water on the newly placed sod and hydroseeding as necessary to maintain a healthy stand of vegetation until Paragraph 1.6 of this Section is satisfied.

3.2 SEEDING

A. Seeding for temporary and permanent erosion control work shall be in conformance with Reference Standard (LDOTD - Section 717). There will be no separate measurement or payment for watering.

3.3 SODDING

A. Sodding work shall be in conformance with the Reference Standard (Section 714) and these Specifications. Areas to receive sod shall be graded to allow for two inches (2") of sod thickness. Finished sod elevation shall generally match elevation of adjacent pavement/surface.

3.4 HYDROSEEDING

A. Hydroseeding for permanent erosion control work shall be m conformance with the Reference Standard (LDOTD - Section 739).

3.5 FERTILIZER

A. Fertilizer shall be installed in conformance with the Reference Standard (LDOTD - Section 718) and these Specifications.

3.6 AGRICULTURAL LIME

A. The top six (6) inches of embankment material shall have a pH between seven (7) and eight (8) which will support adequate vegetation. If required, the material shall be treated with agricultural lime to promote support of adequate vegetation.

3.7 WATER

A. Water for irrigation purposes may be obtained from any source, except that chemically contaminated or oily water shall not be used.

3.8 MAINTENANCE

A. Apply a starter fertilizer with a ratio of 1:1:1 (nitrogen:phosphorous:potassium) after grass seed has germinated and growth has begun (or sod has sufficiently rooted), at a rate of one (1) pound of nitrogen per 1,000 square feet. Apply fertilizer at the above rate every month thereafter, thoroughly watering in for each application until Paragraph 1.6 of this Section is satisfied.

B. Mowing shall begin once grass reach 3" tall, if applicable for the required maintenance period. Care shall be taken to ensure that no more than one-third (1/3) of the leaf blade is removed in a single mowing.

C. Watering, fertilizing and mowing operations shall continue on the newly sodded and hydroseeded areas until Paragraph 1.6 of this Section is satisfied.

END OF SECTION 02701

SECTION 02801 – FIELD IRRIGATION SYSTEM

PART 1 - GENERAL

1.1 SCOPE

A. This Section covers the requirements for materials, reinstallation and testing of the irrigation system including all work, labor, tools and incidentals required to complete the irrigation system including all piping, valves, irrigation heads, control wiring, controller connections/programming, testing, etc., as directed by the ENGINEER.

1.2 DISCLOSURE

A. The work included herein is generally for replacement of the existing irrigation system within the ball fields to accommodate the new synthetic turf infields. The CONTRACTOR shall field verify the layout of the existing irrigation systems. Actual location and quantities of pipes and fittings may vary due to field adjustments for existing and or proposed conditions and or other obstruction and or circumstances as may be required to provide the proper and intended irrigation coverage. The CONTRACTOR is required to investigate the structural and finished conditions affecting all of the contract work including obstructions, grade differences, dimensional data, etc., which may or may not affect the required performance of the system.

1.3 SYSTEM OPERATION

A. Complete and fully functional irrigation system as approved by the ENGINEER and accepted by the OWNER will be the sole responsibility of the CONTRACTOR. All modifications and or adjustments to the irrigation system made by the CONTRACTOR as a result of changing field conditions and/or construction modifications shall be coordinated with the ENGINEER in the field.

1.4 FIELD CAUTION

A. The CONTRACTOR will be responsible for all damages caused to any utilities and or facilities, both above ground and underground, as a result of irrigation installation. Lack of installation of PVC irrigation sleeves beneath paved areas will result in pavement replacement at the CONTRACTOR's expense. The irrigation system shall be installed to the maximum extent possible to promote water, soil, and energy conservation.

1.5 QUALIFICATION

A. The CONTRACTOR shall provide documentation for himself and/or his irrigation Sub-Contractor, documenting a minimum of five (5) years experience and present proof of the installation of five (5) irrigation systems of a similar magnitude and or scope of this project.

1.6 SUBMITTALS

A. Submit product data in accordance with Contract Documents.

1.7 O&M MANUALS

A. If required, provide Operation and Maintenance Manuals for the irrigation modifications.

1.8 PROJECT CONDITIONS

A. The CONTRACTOR shall warrant that he has complete knowledge of the conditions under which the work will be performed and is thoroughly familiar with the Contract Documents and all applicable codes and standards. Failure to have done so will not relieve the CONTRACTOR of his obligation to furnish all supervision, labor, tools, materials, equipment and supplies necessary to perform the provisions of the work detailed on the Drawings, outlined in these Specifications and Contract Documents.

B. Determine the locations of all utilities, subsurface drainage and underground construction so that proper precaution may be taken not to disturb or damage during all operations. The CONTRACTOR shall repair immediately, at his expense, any damage to utilities or other construction resulting from the work.

C. The CONTRACTOR shall assume full responsibility for all intentional and unintentional disturbance or damage to the site by all parties, employees, contract workers, or sub-contractors involved under the authority or interest of the CONTRACTOR. The OWNER shall be the sole and final authority of the acceptability of all restoration and or repairs related thereto. All expenses of any disturbance or repairs shall be the sole responsibility of the CONTRACTOR.

D. Coordinate work schedules to avoid interference with other ongoing construction.

E. Store materials delivered to site, prior to actual usage, in a secure place not to interfere with other construction and protect from vandalism and damage by weather or other elements.

1.9 QUALITY ASSURANCE

A. To ensure unity of responsibility, all major irrigation system and components shall be the standard products and or components of a single manufacturer having a minimum of ten (10) years experience in the manufacture, design, and installation of irrigation systems including but not limited to system controller, wirings, solenoid and isolation valves, irrigation heads, quick connects, swing joints, valve boxes, and all related appurtenances.

1.10 LABOR COMPENTENCE

A. The successful CONTRACTOR shall maintain a competent, skilled and satisfactory work force during and through the completion of the construction period. In no case, shall unskilled labor be allowed to operate equipment, assembly, glue, install, wire, test or adjust components of the irrigation system. If in the opinion of the ENGINEER, the labor furnished by the CONTRACTOR is incompetent or inexperienced in the practice assigned, the CONTRACTOR shall remove such persons or reassign them to a practice acceptable to the ENGINEER.

1.11 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this Specification to the extent referenced. The publications may be referred to in the text by designation only.

B. American Society for Testing and Materials (ASTM)
   1. B 62-85 - Standard Specifications for Composition Bronze or Ounce Metal Castings.
   2. D 1784-81 - Standard Specifications for Rigid (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds.
   3. D 1785-86 - Standard Specifications for (PVC) Plastic Pipe, Schedules 40 and 80.
   4. D 2241-84 - Standard Specifications for PVC Pressure-Rated Pipe (SDR Series).
   5. D 2564 Standard Specifications for Solvent Cements for (PVC) Plastic Pipe and Fittings.
   6. F477 Specification for Electrometric seals (gaskets) for joining plastic pipe.

C. American Water Works Association:
   1. C111 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
   2. C153 Ductile - Iron Compact Fittings, 3 Inch through 24 Inch for Water Service

D. National Sanitation Foundation (NSF), requirements for Seal of Approval.

E. Plastics Pipe Institute (PPI), recommendations for hydrostatic design stresses for PVC pipe.

PART 2 - PRODUCTS

2.1 MAJOR IRRIGATION COMPONENTS

2.2 Major irrigation components include:
Irrigation Controllers - Connections/Programming,
Booster Pump,
Irrigation Heads,
Solenoid (Station) Valves with Automatic Pressure Regulators,
Isolation (Ball) Valves,
Swing Joints,
Control Wires and Connectors,
Valve Boxes

In an effort to standardize the system, major irrigation components shall be the same brand.

A. Irrigation Controllers: The irrigation controllers shall have the capability to accept the irrigation wiring/components for the irrigation components required to be installed within this project.

B. Irrigation Heads: Any existing irrigation heads required to be removed for the synthetic turf installation shall be delivered to the OWNER. Replace any heads damaged during construction. New irrigation heads shall be rotary type (full circle or part circle) with capacity and pressure ratings to meet full "Head to Head" coverage and ability to supply the designed flow and pressure and shall include the following minimum specifications and or features:
   1. Two inch (2") diameter exposed black rubber cover and black rubber collar.
   2. Stainless steel tapered riser stem.
   3. Easy arc adjustment for part-circular models through the top of the rotor from 40° to 360°.
   4. Water lubricated gear drive.
   5. Heavy-duty 316 stainless steel retract spring for positive pop-down.

6. Removable seal/check device up to 10 feet or 4.33 psi of head to prevent puddling and or erosion that may be caused by low-head drainage.
7. Three (3) port color coded nozzles that are interchangeable from the front with no special tools for adjustment from or too long, mid, or close range watering, with a radius adjustment screw that allows radius reduction of up to 25% without changing nozzles. Self-adjusting stator shall not require replacement when changing nozzles.
8. Pressure-activated wiper seal and tapered riser stem to protect internals from debris and ensure positive pop-up and retraction.
9. Stainless steel trip gears.
10. Operating Range:
    a. Precipitation Rate: 0.37 to 1.14 inches/hour.
    b. Radius: 39 to 65 feet.
    c. Pressure: 30 to 90 psi.
    d. Flow: 2.9 to 21.7 gpm.
11. Dimension:
    a. 1" female NPT threaded inlet.
    b. Overall height: 8 1/2 inches.
    c. Pop-up height: 4" inches.
    d. Exposure Surface: 2" inch diameter (black rubber).
12. If new irrigation heads are required, they shall be Rain Bird Falcon 6504 Pop-Up Sprinkler with #6 (light blue) nozzles, #10 (gray) nozzles, #14 (light green), or #16 (brown) nozzles.

C. Solenoid (Station) Valves: The electric remote control solenoid valve shall be a normally closed 24 VAC 60 Hz actuated globe pattern with a balanced pressure diaphragm design. The valve pressure rating shall be 200 psi minimum. Pressure loss through the valve shall not exceed 3.9 psi at 100 gpm and 10 psi at 160 gpm. The valve body and bonnet shall be heavy cast red brass. Diaphragm shall be nylon reinforced EPDM. All other internal parts shall be brass, bronze and stainless steel. The valve shall have both internal and external manual open/close control for manual operation without energizing the solenoid. The solenoid shall be fully encapsulated, one piece, with capture plunger and removable retainer. The solenoid shall be factory attached to the valve and ready for use. Valves requiring field attachment of the solenoid will not be accepted. The solenoid shall be 24 VAC, 60 Hz and shall open with 19.6 VAC minimum at 200 psi. Average inrush current shall not exceed 0.41 amps at 24 VAC. Average holding current shall not exceed 0.28 amps. The valve shall have a contamination proof self-flushing stainless steel screen located at the valve inlet. All solenoid actuated valves shall be one and one-half inch (1-1/2”) and shall be factory equipped with a pressure regulating module capable of regulating outlet pressure between 15 and 100 psi. The pressure regulating module shall have an adjusting knob for setting pressure, a valve connection for pressure monitoring, and shall be fully adjustable manual and or electrically. Solenoid Valves shall be Rain Bird EFB-CP Series, or approved equal.

D. Isolation (Ball) Valves: Isolation (ball) valves shall be brass construction, full port and have female pipe threads (NST) on each end. Ball valves shall have a minimum working pressure of 150 psi, a blowout proof stem and a fluorocarbon elastomer stem 0-ring. Brass ball valve shall be Model LFFBV-3C as manufactured by Watts, or approved equal.

E. Swing Joints: Swing joints shall be constructed of rigid polyvinyl chloride (PVC) and have a pressure rating of 350 psi. Each swivel joint shall be sealed by two (2) 0-rings. Swing joints shall be l", 1 1/2”, or 1 ½” as required. Length shall be 18".

F. Control Wires and Connectors: Use 1/c #12 type direct burial RED wire for all 24VAC

"Control" wiring, and 1/c #12 type direct burial WHITE wire for all 24 VAC "Common" wiring. Approved wire splices shall be used. Solder or join all wire splices with positive mechanical connectors. Splices must be properly insulated and waterproofed. Splicing is allowed only at sprinkler heads or in 10" valve boxes.

G. Valve Boxes and Lids:

1. The valve boxes and lids shall be of adequate size to accommodate the solenoid valve/ball valve assembly (14"x 19" min.) and the wire splice locations (10" dia. min.). The valve box and plastic lid shall be green and constructed of modified polyethylene material for maximum durability and corrosion resistance. The unfoamed resin shall have a tensile strength of 3,300 psi per ASTM D 638. The valve box and lid shall have UV stabilizers. The green material shall be uniform throughout the lid and be void of foaming agents that create air pockets within the box wall. Locate valve boxes a minimum of two feet from paving, curbs or other construction and not in locations where vulnerable to heavy traffic.
2. Lids:
   a. The lids shall seat securely and evenly inside the meter/valve boxes and shall not overlap the top edge of the boxes.
   b. The lids shall have a diamond pattern for skid resistance.
   c. The lids shall be solid with the exception of the bolt and finger holes.
   d. The lids shall have "IRRIGATION" stamped thereon.
3. Body:
   a. The body shall be tapered and have crush resistant ribbing along the outside of the box.
   b. The body shall have a flange around the lid opening to help prevent settling and aide in the adjustment to grade.
   c. The body shall have one cut out pipe slot location 180 degrees apart that measure - 2 1/2"x 2 1/2".
4. Valve boxes and lids shall be Pro-Spec Series (Commercial Grade) as manufactured by NDS of Lindsay, CA (877-412-7467), www.nds pro.com or approved equal.

2.3 MINOR IRRIGATION COMPONENTS

A. Plastic (PVC) Pipe and Fittings: Minor irrigation components include plastic pipe and fittings. All plastic pipe shall be extruded from 100% virgin unplasticized polyvinyl chloride (PVC). It shall be manufactured in accordance with ASTM D2241 for PVC Pipe, have a Standard Dimension Ration (SDR) of 21 and have a Pressure Rating (PR) of 200 psi. All furnished PVC pipe shall be continuously marked with the manufacturer's name or trademark, iron pipe size, material, type and working pressure. All sleeving to protect pipe or control wires under paving or other construction shall be Sch 40 PVC buried at a 24" minimum depth and a minimum of one foot (1') beyond the edges of paving and synthetic turf curbs. All main line pipe segments and fittings shall be PVC CL200 Ring-Type SDR 21 of the same manufacturer of the pipe. PVC solvent cement shall comply with the recommendations of the Pipe Manufacturer. Use Teflon tape for all threaded connections.

B. Ductile Iron Connection Fittings:

1. Fittings: Fittings (solid sleeves) for connection of new PVC main pipe section to existing PVC main shall be mechanical joint S.S.B., unless otherwise shown on the Drawings, and shall be made of ductile cast iron with a pressure rating of 350 psi, and cement lined and asphalt coated. All fittings shall meet or exceed ANSI/AWWA C153/A21.53 and ANSI/AWWA Cl 11/A21.11 specifications.

Fittings shall be as manufactured by Tyler Union of Anniston, AL (800-226-7601) or approved equal.

2. Mechanical Joint Restraint Devices: All follower glands shall be mechanical joint restraint devices. Mechanical joint restraint devices shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536-80. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1 and shall be EBAA Iron, Inc., MEGALUG or approved equal.
3. Bolts and Nuts for Mechanical Joint Fittings: Bolts and nuts for mechanical joint fittings shall consist of cor-ten steel.
4. Thrust Blocking: Concrete for thrust blocking shall be in conformance with Section 03 30 00 – Cast-In-Place Concrete.

PART 3 - EXECUTION

3.1 GENERAL

A. Prior to all irrigation work included under this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where the irrigation work may properly commence. The CONTRACTOR shall not willfully install or modify any sprinkler equipment when it is obvious in the field that obstructions, grade differences or difference in the area's dimensions exist that may not have been considered in the design process. Such obstructions or difference shall be brought to the attention of the ENGINEER. In the event this notification is not performed by the CONTRACTOR, the CONTRACTOR shall assume full responsibility and the cost related to any revisions necessary. When sprinkler system work is to be installed close to or will interfere with the work of other trades, the CONTRACTOR shall coordinate and work out space conditions to permit all work to be installed satisfactorily. The CONTRACTOR shall make necessary changes in his work to correct the condition without additional compensation. Flag the location of all sprinkler heads, valves and controllers. In the event of a discrepancy, immediately notify the ENGINEER. Do not proceed until such discrepancies have been resolved.

3.2 SLEEVING

A. Sleeving shall be buried at a minimum of 18". Upon completion of site filling and compaction operations and prior to the construction of foundations, roadways, walks, or other pavements or obstructions, install sleeves of sufficient sizes to accommodate future irrigation piping and/or control wiring. Ends of sleeves shall extend one foot (1’) past the edges of all paving, curbs and synthetic turf. Clearly mark for future use.

3.3 TRENCHING AND BACKFILLING

A. Refer to Section 31 23 00 - Excavation, Backfilling for Trenches, Pavement, and

Structures.

3.4 CONNECTION OF NEW PVC PIPE SEGMENT TO EXISTING MAIN (IF REQUIRED)

A. Connection of new PVC Sch. 40 pipe segment to existing irrigation main shall be accomplished by using a PVC solvent weld coupling on one end of segment and a ductile iron mechanical joint solid sleeve on the other end.

3.5 PIPE AND FITTING CONNECTIONS

A. When connecting Ring-type PVC Piping and fittings, the CONTRACTOR shall make certain that each rubber ring gasket is properly fitted into place free from all foreign objects and properly seated. Use only the solvent supplied and recommended by the pipe manufacturer to make solvent welded joints. Thoroughly clean pipe and fittings of dirt, dust and moisture before applying solvent. Make solvent welds with a nonsynthetic bristle brush in the following sequence: Apply an even coat of solvent to the outside of the pipe, apply solvent to the inside of the fittings and then re-apply a light coat of solvent to the outside of the pipe, making sure that the coated area on the pipe is equal to the depth of the fitting socket. Insert pipe quickly into the fitting and tum the pipe approximately 1/4 tum to distribute the solvent and remove air bubbles. Check all tees and ells for correct position and hold the joint for approximately 15 seconds so that the pipe does not push out from the fitting. Allow at least 15 minutes drying time for each weld joint before moving. Allow all joints to set a minimum of 24 hours prior to pressurization of system.

3.6 FLUSHING

A. The CONTRACTOR shall exercise extraordinary caution in flushing and pressuring the irrigation mainlines. Under NO circumstances shall portions of the piping system be flushed through the sprinkler heads. Should it be concluded that the mainlines where in fact flushed through sprinkler heads, the CONTRACTOR shall be fully accountable for all cost for equipment replacement or repair as determined by the ENGINEER.

3.7 WIRE INSTALLATION

A. Verify that the work of this section is installed in strict accordance with the latest edition of the National Electric Code and local electrical codes. Install "common" and "control" wires in the same trenches as the main and lateral lines. The wires shall be bundled together and taped every 10 feet. Provide expansion loops at every splice, change of direction, at the valves, and where the wire enters the conduit at the controllers. The expansion loops shall be created by wrapping 3 feet of wire around 1/2 inch diameter pipe to form a coil. Connect each solenoid to the controller with a "control wire" which is red in color. Connect a "common neutral wire" to all solenoids which is white in color. Solder or join all wire connections by positive mechanical connectors. Splices must be properly insulated and waterproofed. Control wire splices should be avoided if at all possible and will be allowed only in runs more than 1000 feet and located in 10" valve boxes.

3.8 CONTROLLER CONNECTIONS

A. The new irrigation wiring/components shall be connected to the controllers mounted on a

new concrete pad. Controllers may be fed from the existing scoreboard (CONTRACTOR to confirm voltage). Electrical connections shall be made as indicated or required by the manufacturer. All electrical connections and wiring shall comply with Local and State codes and be installed by those skilled and licensed in the trade.

3.9 SPRINKLER HEAD INSTALLATION

A. After finished grade is accomplished, install/adjust heads to finished grade and backfill with clean topsoil so that head is stabilized and no lateral motion is exhibited during operation. The CONTRACTOR shall adjust the position of the swing joint arm such that the angle between the arm and the irrigation pipeline is no more than thirty degrees (30°) after installation. Riser extension fittings may be necessary between the swing joint and the sprinkler head or quick coupler valve.

3.10 OPERATION AND BALANCING

A. Upon completion of the irrigation system modifications, the entire system shall be tested for proper operation. Observe that all stations function properly and in the correct sequence. The CONTRACTOR shall balance and adjust the various components of the system so that the overall operation is most efficient. This work shall include adjustment to all sprinkler heads and individual station adjustments to the controls. The CONTRACTOR shall ensure that the entire system is operating properly, that it is balanced and adjusted, and that all work and cleanup is completed.

3.11 FACTORY REPRESENTATION

A. The CONTRACTOR, at his own expense, shall provide the services of a factory trained representative of the irrigation components manufacturer. The duration of the representatives "ON-SITE" time shall be four (4) hours minimum. The CONTRACTOR shall schedule a time and date with the OWNER, ENGINEER and others once the irrigation system has been installed and placed on-line for use and after operation of one (1) full day without incident. The purpose of the factory representative will be to train the OWNER'S personnel in the use of the complete irrigation system, provide O&M Manuals, trouble shoot, and make any adjustments necessary before final acceptance by the OWNER.

END OF SECTION 02801

SECTION 02999 - MISCELLANEOUS WORK AND CLEANUP

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This section includes operations which cannot be specified in detail as separate items but can be sufficiently described as to the kind and extent of work involved. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals to complete the work under this section.

B. The work of the section includes, but is not limited to, the following:
   1. Restoring offences and guard rails
   2. Crossing utilities
   3. Restoring easements (servitudes) and rights-of-way
   4. Cleaning up
   5. Incidental

1.2 WORK SPECIFIED UNDER OTHER SECTIONS

A. All work shall be completed in a workmanlike manner by competent workmen in full compliance with all applicable sections of these specifications.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials required for this section shall be of at least the same type and quality as materials which are to be restored. Where possible, the CONTRACTOR shall reuse existing materials which are removed and then replaced, with the exception of paving.

PART 3 - EXECUTION

3.1 RESTORING OF FENCES AND GUARDRAILS

A. At several locations it may be necessary for the CONTRACTOR to remove, store, and replace existing fences and guard rails during construction. Only the section directed by the ENGINEER shall be removed. If any section of fence is damaged due to the CONTRACTOR'S negligence, it shall be replaced with fencing equal to or better than that damage at no cost to the OWNER, and the work shall be satisfactory to the ENGINEER.

B. Guard rails in the vicinity of the work shall be protected from damage. If damaged, guard rails shall be replaced in condition equal to that existing before construction began.

3.2 CROSSING UTILITIES

A. This item shall include any extra work required in crossing culverts, water courses, drains, water mains, and other utilities, including all sheeting and bracing, extra excavation and backfill, or any other work required for the crossing, whether or not shown on the drawings.

3.3 CROSSING OR WORKING AJACENT TO EXISTING GAS LINES, TELEPHONE LINES, ELECTRIC LINES, AND CABLE TV LINES

A. The CONTRACTOR shall notify the proper authority of the utility involved when work adjacent to these lines is required. The CONTRACTOR shall coordinate all work by the utility so that the progress of construction will not be hampered. CONTRACTOR is to notify the utility company at least forty-eight (48) hours in advance.

3.4 RESTORING THE EASEMENTS (SERVITUDE) AND RIGHTS-OF-WAY

A. Portions of the construction may occur in easements through private property. The CONTRACTOR shall be responsible for all damage to private property due to his operations. He shall protect from injury all walls, fences, cultivated shrubbery, pavement, underground facilities (such as water pipe), or other utilities which may be encountered along the easement. If removal and replacement are required, it shall be done in a workmanlike manner so that the replacement is equivalent to that which existed prior to construction.

B. Existing lawn surfaces damaged by construction shall be regraded and resodded. These areas shall be maintained until all work under this contract has been completed and accepted.

3.5 CLEANING UP

A. The CONTRACTOR shall remove all construction material, excess excavation, buildings, equipment and other debris remaining on the job as a result of construction operations and shall render the site of the work in a neat and orderly condition.

3.6 INCIDENTAL WORK

A. Do all incidental work not otherwise specified, but obviously necessary, for the proper completion of the contract as specified and as shown on the drawings.

END OF SECTION 02999

SECTION 03300 - CAST-IN-PLACE CONCRETE

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Labor, materials, services and equipment required in conjunction with or properly incidental to placing of cast-in-place concrete slabs, building members, and MEP equipment pads as described herein or as shown on the Drawings, including but not limited to:
   1. Concrete mix designs.
   2. Assistance with Owner provided laboratory testing of concrete.
   3. Installation of items to be built-in formwork or embedded in concrete but furnished by other trades, including metal anchors, anchor slots, reglets, hangers, supports, ties, inserts, bolts, corner guards, and sleeves.
   4. Cast-in-place concrete, with formwork, under slab vapor barrier, reinforcing, accessories, appurtenances, finishing and curing required to complete concrete work.
   5. Grouting under structural steel base plates.
   6. Foundation for columns, walls, and slabs on grade.
   7. Super-structure for walls, columns, slabs, curbs, stairs, steps, equipment pads, walks, and pre-moulded expansions joints.

B. Examine the drawings for Plumbing, Mechanical, and Electrical work. These subcontractors will furnish and set sleeves or box forms required for openings. Contractor shall use care in placing reinforcement and pouring concrete so as not to displace such sleeves or boxes.
   1. All slots, chases, recesses, or openings indicated on the drawings, which are not formed by sleeves or boxes shall be provided in locations shown. When the work of other contractors is completed, the excess part of the openings shall be completely closed with concrete.

1.2 RELATED REQUIREMENTS

A. Division 1 Sections applicable to the Work of this Section.

1.3 QUALITY ASSURANCE

A. Where standards or requirements of this Section are in conflict with those noted on the Contract Drawings, or the Building Code, the more stringent requirements shall govern. Bring all conflicts and discrepancies to the attention of the Architect and do not start work until such conflicts and discrepancies are clarified and corrected. Failure to do so will not relieve the Contractor from performing the Work correctly at no additional expense to the Owner.

B. Testing Laboratory Services:
   1. Test results shall meet or exceed established standards. A technician from the Owner’s Testing Laboratory must be present during all operations.

C. Evaluation and Acceptance:
   1. Codes and Standards: The Work described in this Section, unless otherwise noted on the Drawings, or herein specified, shall be governed by the editions of the following codes or specifications approved by authorities having jurisdiction.

a. American Association of State Highway and Transportation Officials (AASHTO)
   1) TP 23, "Proposed Standard Method of Test for Water Content of Freshly Mixed Concrete Using Microwave Oven Drying"

b. American Concrete Institute (ACI)
   1) 211.1, "Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete"
   2) 214, "Recommended Practice for Evaluation of Strength Test Results of Concrete"
   3) 301, "Specifications for Structural Concrete for Buildings"
   4) 302, "Guide for Concrete Floor and Slab Construction"
   5) 304, "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete"
   6) 305, "Hot Weather Concreting"
   7) 306, "Cold Weather Concreting"
   8) 309, "Standard Practice for Consolidation of Concrete"
   9) 311, "ACI Manual of Concrete Inspection"
   10) 315, "Manual of Standard Practice for Detailing Reinforced Concrete Structures"
   11) 318, "Building Code Requirements for Reinforced Concrete"
   12) 347, "Recommended Practice for Concrete Formwork"
   13) 355.2, "Qualification of Post-Installed Mechanical Anchors in Concrete & Commentary"
   14) Keep one copy of "Manual of Concrete Practice" at job site at all times.

c. American Society for Testing and Materials (ASTM)
   1) A36, Standard Specification for Carbon Structural Steel
   2) A108, Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality
   3) A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   4) A185, Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
   5) A615, Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
   6) A704, Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
   7) C33, Standard Specification for Concrete Aggregate
   8) C42, Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
   9) C94, Standard Specification for Ready-Mix Concrete
   10) C136, Standard Method for Sieve Analysis of Fine and Coarse Aggregates
   11) C150, Standard Specification for Portland Cement
   12) C172, Standard Practice for Sampling Freshly Mixed Concrete
   13) C260, Standard Specification for Air-Entraining Admixtures
   14) C330, Standard Specification for Lightweight Aggregates for Structural Concrete
   15) C494, Standard Specification for Chemical Admixtures for Concrete
   16) C595, Standard Specification for Blended Hydraulic Cements

17) C881, Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete
18) C979, Standard Specification for Pigments for Integrally Colored Concrete
19) C1107, Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)
20) C1315, Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete
21) E96, Standard Test Methods for Water Vapor Transmission of Materials
22) E1643, Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs
23) E1745, Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
24) F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

d. American Welding Society (AWS)
1) D1.4 Structural Welding Code- Reinforcing Steel

e. Federal Specification (FS)
1) FF-S-325
2) QQ-Z-325C

f. Concrete Reinforcing Steel Institute (CRSI)
1) "Reinforced Concrete – A Manual of Standard Practice"
2) "Recommended Practice for Placing Reinforcing Bars"
3) "Recommended Practice for Placing Bar Supports"

D. Source Quality Control:

1. Concrete production facilities shall meet the requirement for certification by the National Ready Mixed Concrete Association. All ready mix concrete trucks proposed for use on the project shall meet the requirements of NRMCA, Certification of Ready Mix Concrete Production Facilities.
2. Concrete batchers shall be completely interlocked semi-automatic or automatic batchers, as defined by the Concrete Plant Manufacturers Bureau.
3. Concrete batchers shall have graphic, digital, or photographic recorders, which shall register both empty balance and total weight (or volume of water or admixture) of each batched material, time to the nearest minute, date, identification of batch, and numerical count of each batch. Copies of the record shall be furnished to the Inspection and Testing Laboratory.
4. The Inspection and Testing Laboratory shall provide concrete batch plant inspection as follows:
   a. Provide a qualified inspector with necessary equipment and apparatus to inspect weighing and batching of controlled concrete at batch plant on a random basis, approximately once daily as the concrete is being placed on this project.
   b. Make certain that materials and batch equipment used are in accordance with requirements of Specifications.
   c. Check for adjustment in batch weights to compensate for variations in moisture content.
   d. Submit promptly to Architect, certification of weights used in loads of acceptable concrete which has been batched during plant inspection time.

E. Concrete Mix Design Criteria:

1. Design concrete mixes in accordance with ACI 318, Section 5.3, Proportioning on the basis of field experience and/or trial mixtures.
2. Submit the proposed mix designs for each concrete mix type proposed.
3. Determination of required average strength above specified strength shall be in accordance with ACI 318.
4. If trial mixes are used as the basis for the proposed mix design, mold and cure test cylinders in accordance with ASTM C39. Do not place concrete on project until laboratory reports and results of confirmation cylinder tests have been evaluated by the Inspection and Testing Laboratory and results indicate that proposed mixes will develop required strengths.
5. Inspection and Testing Laboratory shall furnish the Architect with a written evaluation of each proposed concrete mix design submitted by the Contractor.
6. Check mix designs and revise if necessary wherever changes are made in aggregates or in surface water content of aggregate or workability of concrete. Water content shall be minimum to produce workable mix. The water content shall be verified in the field by use of the Microwave Test.

1.4 SUBMITTALS

A. Mix Designs: Submit proposed mix designs, including confirmation cylinder test results, in accordance with ACI 318, Section 5.3, Proportioning on the basis of field experience and/or trial mixtures. Submit mix designs to Architect/Engineer and Inspection and Testing Laboratory for evaluation a minimum of 14 days prior to placing concrete. Key requirements:
   1. Combined aggregate gradation.
   2. Proportions of cement, fine and coarse aggregates, and water.
   3. Type, color and dosage of integral coloring compounds, where applicable.
   4. Range of ambient temperature and humidity for which design is valid.
   5. Any special characteristics of mix which require precautions in mixing, placing, or finishing techniques to achieve finished product.

B. Complete test data for trial mixes or a complete summary of previous project test results for mix design based on standard deviation analysis must be included.

C. Provide duplicate delivery tickets for each load of ready-mix concrete delivered to site, in accordance with ASTM C94. Show batch weights on each ticket.

D. Provide mill test reports on an as-used basis for each type and brand of cementitious material used.

E. Provide certification from independent test laboratory indicating under slab vapor retarder compliance with specification and ASTM 1745 Class A requirements.

F. Provide product data for each accessories item specified but necessarily not listed above which are required for a complete installation, including, but not limited to reinforcing, chairs, admixtures, stains and color pigments, grouts, sealers, vapor retarders and barriers, water stops, epoxy adhesives, curing compounds and anchors.

G. Provide Shop Drawings for all reinforcing steel. Show bending diagrams, splicing and laps of rods, shapes, dimensions and details of bar reinforcement and accessories.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Mix and deliver concrete to project ready-mixed in accordance with ASTM C94. Mix concrete a minimum of 70 revolutions of transit mix drum at mixing speed. A minimum of 40 revolutions shall be at the production plant.

B. Schedule delivery so that continuity of any pour will not be interrupted for over 15 minutes.
C. Place concrete on site within 90 minutes after proportioning materials at batch plant.
D. Store bagged cement on platforms off ground. Protect stored cement against the elements. Handle and store fine and coarse aggregate separately in manner to prevent intrusion of foreign material or segregation of the material. Protect all reinforcement until used. Do not use any hardened cement.
E. Mild steel reinforcement at the time of placement of concrete shall be clean and free of all loose dirt, form oil, and other coatings affecting bond.

1.6 JOB CONDITIONS

A. Hot Weather Concreting:
   1. Follow ACI 301 and ACI 305.
   2. Provide water-reducing retarding admixture conforming to ASTM C494, Type D when necessary to retard initial set. The admixture shall be dispensed in accordance with manufacturer's recommendations.
   3. Maximum concrete temperature shall not exceed 95 degrees F at time of placement.
      a. Concrete with temperatures above 90 degrees F shall be placed only if a high range water reducer (superplasticizer) is added to the mix as directed by the Testing Laboratory to maintain the specified slump during placement.
B. Cold Weather Concreting: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures.
   1. Follow ACI 301 and ACI 306.
   2. When ambient temperature at site is below 40 degrees F or is expected to fall to that temperature within ensuing 24 hours, heat water and/or aggregate prior to adding to mix so that temperature of concrete will be between 55 degrees F and 85 degrees F at time of placement.
   3. Maintain temperature of deposited concrete between 50 degrees F and 70 degrees F for minimum of seven (7) days after placing.
   4. Add the specified non-corrosive accelerator for all floor concrete placed at air temperatures below 50 degrees F.
C. Temperature Changes: Maintain changes in concrete temperature as uniformly as possible, but in no case exceed change of 5 degrees F per hour or 25 degrees F in any 24 hour period.
D. Combustion heaters shall not be used during the first 48 hours without precautions to prevent exposure of concrete and workmen to exhaust gasses containing carbon dioxide and/or carbon monoxide.
E. Admixtures intended to accelerate hardening of concrete or produce higher than normal strength at early periods will not be permitted unless approved by the Architect. The use of calcium chloride is specifically prohibited.

1.7 PRE-INSTALLATION CONFERENCE

A. Refer to Section Project Coordination.

1.8 SEQUENCING/SCHEDULING

A. Coordinate Work of this Section with work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other Sections.

PART 2 – PRODUCTS

2.1 APPROVED MANUFACTURERS

A. Manufacturers named within this Section are approved for use on the Project for the product for which they are specified. Other manufacturers must have a minimum of five (5) years of experience manufacturing the product specified and meet or exceed the specifications for that product. Substitution of products must be in accordance with the General Conditions, Supplementary Conditions, and Section 01 33 00, Submittals to be considered prior to proposal.

2.2 MATERIALS

A. Formwork:
   1. General: Contractor may use any of the following formwork materials as long as material meets the following and will not stain, or impart any undesirable texture, i.e. wood grain, where such texture would be objectionable in an exposed location.
      a. Wood Forms:
         1) Plywood: PS 1, Douglas Fir or Spruce species.
         2) Medium Density Overlay (MDO): One (1) side grade; sound, undamaged sheets with clean, true edges.
         3) Lumber: Southern Yellow Pine species; No. 2 grade, with grade stamp clearly visible.
      b. Pre-Fabricated Forms:
         1) Preformed Steel Forms: Minimum 16 gauge matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
         2) Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
      c. Form Liner: Any material recommended by manufacturer to impart finish which will exhibit the finish or design characteristics, i.e. smooth, textured, ribbed, etc. detailed by the Architect for exposed locations as shown or required and capable of being stripped from complex designs without damaging the finish or design. Form liner shall be as manufactured by Symons Corporation, Greenstreak, Inc. or Architect approved equal.
      d. Self-expanding corkboard expansion joint fillers should conform to ASTMD1752 for exterior work. Joint fillers shall extend full depth of slab or joint and be of thickness and lengths indicated on drawings.

B. Metal Reinforcement:
   1. Bars:
      a. General: Conform to ACI 315, latest edition.
      b. Comply with ASTM A615, Grade 60.
      c. Number 3 bars comply with ASTM A615, Grade 40
   2. Welded Steel Wire Fabric (Mesh): Not permitted in structural concrete, unless approved by Structural Engineer.

C. Concrete, General:
   1. Ready-mixed concrete, ASTM C94
   2. Comply with ACI 318.
   3. Concrete must be approved by Architect through design mix and cylinder test of testing laboratory.
   4. Unless approved otherwise by the Architect, use one (1) brand of cement throughout the work where finished surface will be exposed to view.
   5. Strength: Refer to Paragraph 2.3, A.

D. Concrete Materials:
   1. Cement:
      a. Portland Cement, Type I or III, conforming to the requirements of ASTM C150.
      b. Combined aggregate gradation for slabs and other designated concrete shall be 8 percent - 18 percent for large top size aggregates (1-1/2 in.) or 8 percent - 22 percent for smaller top size aggregates (1 in. or 3/4 in.) retained on each sieve below the top size and above the No. 100.
   2. Fly ash: Not permitted.

E. Aggregate:
   1. Fine Aggregate: ASTM C33; clean, hard, durable, uncoated, natural and manufactured sand, free of silt, loam or clay.
   2. Coarse Aggregate: ASTM C33; hard, durable, uncoated, crushed stone; gradation in accordance with Size No. 467 for piers and concrete footings and Size No. 67 for all other concrete. Maximum aggregate size in accordance with ACI 318.
   3. Grading shall be in accordance with “Standard Method for Fine Analysis of Sieve and Coarse Aggregates” (ASTM C136).

F. Water: ASTM C94, Paragraph 4.1.3; potable, clean and free from oil, acid and injurious amount of vegetable matter, alkalis, and other impurities.

G. Admixtures:
   1. Cement-dispersing, water-reducing types: Admixtures shall conform to ASTM C494, Type A or D, and shall be used strictly in accordance with manufacturer's recommendations and as determined by the Inspection and Testing Laboratory. Admixture shall not discolor concrete or in any way affect the appearance of the concrete.
      a. High-range water reducing admixture conforming to ASTM C494, Type F or G shall be used as required and shall be one (1) of the following or Architect approved equal:
         1) Eucon 37 (Type F), Eucon 537 (Type G) by The Euclid Chemical Company
         2) Rheobuild 1000 (Type F), Rheobuild 716 (Type G) by Master Builders
         3) Sikament 300 (Type F), Sikament 86 (Type G) by Sika Chemical Corp.
         4) WRDA-19 (Type F), Daracem 100 (Type G) by W.R. Grace
   2. An air-entraining admixture conforming to ASTM C260 shall be used as required on the Drawings and shall be one (1) of the following or Architect approved equal:
      a. Air-Mix or AEA-92 by The Euclid Chemical Company
      b. Sika Aer by Sika Corporation
      c. MB-VR or MB-AE by Master Builders
   3. Prohibited Admixtures: Calcium chloride, thiocyanates or admixtures containing more than 0.05 percent chloride ions are not permitted.

4. Certification: Written conformance to the above-mentioned requirements and the chloride ion content of admixtures will be required from the admixture manufacturer prior to mix design review by the Architect/Engineer.

H. Non-Shrink Cement Grout:

1. The non-shrink grout shall be a factory pre-mixed grout and shall conform to ASTM C1107, "Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-Shrink)." In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout when placed at a fluid consistency shall achieve 95 percent bearing under a 4 foot x 4 foot base plate. Provide one (1) of the following or Architect approved equal:
   a. NS Grout by The Euclid Chemical Company
   b. Five Star Grout by U.S. Grout Corp.
   c. Horn Non-Corrosive Non-Shrink Grout by Tamms Industries
   d. Duragrout by L & M Construction Chemicals, Inc.
   e. Masterflow 713 by Master Builders
   f. SikaGrout 212 by Sika Corp.
   g. Sonogrout 10K by Sonneborn
   h. 588 Grout by W. R. Meadows, Inc.
   i. US SPEC GP Grout by US Mix Products Company
2. High Flow Grout: Where high fluidity and/or increased placing time is required, use high flow grout. The factory pre-mixed grout shall conform to ASTM C1107, "Standard Specification for Packages Dry, Hydraulic-Cement Grout (Non-Shrink)." In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout when placed at a fluid consistency shall achieve 95 percent bearing under an 18 inch x 36 inch base plate. Provide one (1) of the following or Architect approved equal:
   a. Hi-Flow Grout by The Euclid Chemical Company
   b. Crystex by L & M Construction Chemicals, Inc.
   c. Masterflow 928 by Master Builders
   d. CG-86 Grout by W. R. Meadows, Inc.
   e. US SPEC MP Grout by US Mix Products Company

I. Non-Oxidizing Metallic Hardener: (For use at Loading Dock, if applicable)

1. Non-Oxidizing Metallic Floor Hardener: The specified non-oxidizing metallic floor hardener shall be formulated, processed and packaged under stringent quality control at the manufacturer's owned and controlled factory. The hardener shall be a mixture of specially processed non-rusting aggregate, selected portland cement and necessary plasticizing agents. Product shall be Diamond-Plate by The Euclid Chemical Company or Architect approved equal.

J. Evaporation Retardant:

1. Evaporation Retardant shall be a thin, continuous film which prevents rapid moisture loss from the concrete surface. For use when concrete operations must be performed in direct sun, wind, high temperatures, or for relative humidity. Subject to compliance with requirements, provide one (1) of the following or Architect approved equal:
   a. Eucobar by The Euclid Chemical Company
   b. Confilm by Master Builders
   c. Evapre by W. R. Meadows, Inc.
   d. US SPEC Monofilm ER by US Mix Products Company.
   e. E-Con by L& M Construction Chemicals

K. Sealer/Densifier: Provide "Euco Diamond Hard" by The Euclid Chemical Company, "Sealhard" by L&M Construction Chemicals, or equal by Master Builders, Sika Corp., Sonneborn, US SPEC, or Architect approved equal.

L. Chemical Hardener/Dustproofer: Provide “Surfhard” by The Euclid Chemical Company, “Chemhard” by L&M Construction Chemicals, or equal by Master Builders, Sika Corp., Sonneborn, US SPEC, or Architect approved equal.

M. Curing Compound: dissipating resin type, which chemically breaks down after approximately eight (8) weeks. Membrane forming compound shall meet ASTM C309, Types 1 and 1D Class B, water based, VOC/AIM Compliant. Provide “Kurez DR VOX” by The Euclid Chemical Company, “Cure R” by L&M Construction Chemicals, “1100 Clear” by W. R. Meadows, Inc., US SPEC “Maxcure Resin Clear” by US Mix Products Company, or equal by Master Builders, Sika Corp., BASF, or Architect approved equal.

N. Curing and Sealing Compound: high solids acrylic copolymer emulsion blend. Membrane forming compound shall meet ASTM C1315, Type 1 Class B. Provide “Super Rez-Seal” by The Euclid Chemical Company, “Dress & Seal” by L&M Construction Chemicals, “VOCOMP 25 1315” by W. R. Meadows, Inc., US SPEC “CS-25-1315” by US Mix Products Company, or equal by Master Builders, Sika Corp., BASF, or Architect approved equal.

O. Epoxy Adhesive for rebar and threaded rod dowelling: Adhesive anchors shall have been tested and qualified for use in accordance with ICC-ES AC308 for cracked and uncracked concrete recognition. Size and location of anchors shall be as indicated on the drawings. Provide one (1) of the following or Structural approved equal:
   1. Simpson Strong-Tie SET-XP (ICC-ES ESR-2508)
   2. Hilti Corp. RE 500-SD (ICC-ES ESR-2322)
   3. Powers Fasteners PE1000+ (ICC-ES ESR-2583)

P. Epoxy Adhesive to bond fresh concrete to hardened concrete and grout base plates: ASTM C881, two (2) component, 100 percent solids, 100 percent reactive compound suitable for use on dry or damp surfaces. Provide one (1) of the following or Architect approved equal:
   1. Euco #452 Epoxy System or Euco #620 Epoxy System by The Euclid Chemical Company
   2. Sikadur Hi-Mod by Sika Corp.
   3. Rezi-Weld 1000 by W. R. Meadows, Inc.
   4. US SPEC Maxibond 2500 by US Mix Products Company.
   5. Epobond by L& M Construction Chemicals.

Q. Underslab Vapor Retarders and Barriers:
   1. Vapor Retarder Membrane:
      a. Requirements:
         1) Class: ASTM E1745, Class A.
         2) Water Vapor Permeance: ASTM E96, 0.015 perms maximum.
         3) Tensile Strength: ASTM E154 (Section 9, Average), 45.0 pounds per inch, minimum.
         4) Puncture Resistance: ASTM D1709 (Method B), 2400 grams, minimum.
      b. Provide compatible seam taping and pipe boots or sealing mastic in accordance with manufacturer’s requirements.
      c. Provide proof of compliance to Architect at time of delivery of materials.
      d. Provide one (1) of the following under entire slab, unless noted otherwise:
         1) Barrier Bac-Inc “VB-350”
         2) Insulation Solutions, Inc. “Viper II 15 mil”
         3) Raven Industries, Inc. “VaporBlock 15”
         4) Reef Industries, Inc. “Griffolyn 15 Mil Green”
         5) Stego Industries, LLC “Stego-Wrap 15-mil”

6) Tex-Trude, “Xtreme 15 Mil”
7) W. R. Meadows, Inc. “Perminator 15”

2. Vapor Barrier: Under Wood Floors at Gymnasiums, Stages, and Dance Floors, and at Auditorium Areas Below Finish Floor Level: Premoulded Membrane Vapor Seal with Plasmatic Core manufactured by W.R. Meadows, Inc., Hempshire, IL; or Architect approved equal.
3. Below Grade Waterproofing: Provide below grade waterproofing at vertical walls below grade and beneath elevator pit in accordance with Section 07 16 00.

R. Miscellaneous Structural Metals Associated with Structural Concrete:
1. Structural steel pieces, including miscellaneous structural metals placed in concrete, exposed to weather, in permanent contact with soil, or accessible to salt intrusion shall be hot dipped galvanized in accordance with ASTM A123.
2. Structural steel pieces embedded in concrete shall conform to ASTM A36, unless noted otherwise on the Drawings.
3. Welding of inserts, anchors and other steel pieces used in conjunction with structural concrete shall conform to AWS Dl.4.
4. Welding of reinforcing steel used in conjunction with structural concrete shall conform to AWS Dl.4.
5. Headed stud anchors shall conform to ASTM A108, minimum tensile strength 60,000 PSI.
6. Mechanical and screw anchors shall have been tested and qualified for use in Accordance with ACI 355.2 and ICC ES AC193 for cracked and uncracked concrete recognition. Size and location shall be as indicated on the Drawings. Provide one (1) of the following or Structural approved equal.
   a. Simpson Strong-Tie Strong-Bolt wedge anchor (ICC-ES ESR-1771)
   b. Simpson Strong-Tie Strong-Bolt 2 wedge anchor (ICC-ES ESR-3037)
   c. Simpson Strong-Tie Titen HD screw anchor (ICC-ES ESR-2713)
   d. Hilti Corp. Kwik-Bolt TZ wedge anchor (ICC-ES ESR-1917)
   e. Hilti Corp. Kwik HUS-EZ screw anchor (ICC-ES ESR-3037)
   f. Hilti Corp. HAD undercut anchor (ICC-ES ESR-1546)
   g. Powers Fasteners Power-Stud+ SD2 wedge anchor (ICC-ES ESR-2502)
   h. Powers Fasteners Wedge-Bolt+ screw anchor (ICC-ES ESR-2526)
   i. Powers Fasteners Atomic+ undercut anchor (ICC-ES ESR-3067)

S. Miscellaneous Materials and Accessories:
1. Form ties: Adjustable length and type which will not leave holes larger than 1 inch in diameter in face of concrete. Ties shall be such that when forms are removed, no metal will be within 1 inch of the finished concrete surface. The holes must be patched.
2. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages, Fasteners: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.
3. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture.
4. Chairs and Spacers: Heavy-duty plastic-type sized to support all reinforcing steel to proper height. Use type with sand cushion pads where concrete is on grade. Provide chairs and spacers Series “B” by W.H.C. Products, Inc., E-Z Chair by Aztec Concrete Accessories, Inc., GTI Bar Chair by General Technologies, Inc., or Architect approved equal.
5. Waterstops:
   a. Ribbed flat 3/16 inch by six (6) inch with 1/8 inch ribs, rated for 75 foot of head pressure. Provide factory made corner fittings weld splices with

thermostatically controlled heating iron. Style No. 782 by Greenstreak, Inc., or Architect approved equal.

b. Contractor's Material Option: Specially formulated preformed joint sealant that provides a lasting, watertight bond to both fresh and cured concrete surfaces. Synko-Flex Preformed Plastic Adhesive Waterstop and Synko-Flex Primer manufactured by Synko-Flex Products, Division of Henry Company, Houston, Texas; (713) 671-9502 or Architect approved equal.

6. Carton Void Forms: If shown or required, shall be wax coated corrugated paper material, rectangular in shape and same width as the grade beams, with 1/8 inch thick tempered hardboard for top plane. Provide void forms as required (i.e. with curves, radial) that have vertical supported edges adjacent to all drilled piers, in order to prevent damage to the interior supporting network caused by field cutting.
7. Soils retainers: If shown or required, shall be composed of lightweight, plastic material that is not adversely affected by moisture. They must be flexible, impact resistant and must be able to resist lateral loads applied by the soils. Retainers shall extend both 6" above and below the top and bottom of void forms.
8. Corners: Chamfer, wood strip type; one (1) inch x one (1) inch size; maximum possible lengths.
9. Dovetail Anchor Slot: Galvanized steel, 22 gauge thick, foam filled, release tape sealed slots, anchors for securing to concrete formwork.
10. Flashing Reglets: Galvanized steel, 22 gauge thick, longest possible lengths, with alignment splines for joints, foam filled, release tape sealed slots, anchors for securing to concrete formwork.
11. Bonding Agent: Acrylic latex emulsion type as recommended for bonding new concrete to old concrete.
12. Integral Color Pigment (If shown or required): Mineral oxide, lightfast, lime-proof, water-resistant type conforming to ASTM C979. Color(s) shall be as selected by Architect from manufacturer's standard color line. Provide one (1) of the following or Architect approved equal:
    a. ChemSystems, Inc.
    b. Davis Colors
    c. New Riverside Ochre Co., Inc.
    d. L.M. Scofield Company
13. Color Stain (If shown or required): A chemically reactive stain, designed for adding variegated color to new or old concrete. Color(s) shall be as selected by Architect from manufacturer's standard color line. Provide Lithochrome Chemstain by L.M. Scofield Company or Architect approved equal.
14. Joint Sealants: Refer to Section 07 92 00, Building Sealants or 32 13 73 Pavement Joint Sealants.

2.3 CONCRETE MIXES

A. Strength: Concrete is classified and specified by ultimate compressive strength (f c) at the age of 28 days. Unless indicated otherwise on the Drawings, strengths shall be as follows:
    1. All concrete including grade beams, footings, slabs, and pads: 5 sack/3,000 psi/28 days.
    2. Strength recommendations on Structural Drawings supersede when they are greater than specified here.

B. Interior slabs subjected to vehicular traffic: This concrete shall have a maximum W/cm of 0.48 and maximum air content of 3 percent. No air-entraining admixture shall be added to this mix.

C. Concrete permanently exposed to freezing and thawing shall conform to Chapter 4 – Durability Requirements of ACI 318. W/cm and air content ratios shall coincide with its respective Exposure Class.

D. Proportions: Proportions of cement, aggregate, admixture and water to attain required plasticity and compressive strength shall be in accordance with ACI 318, Section 5.3, Proportioning on the basis of field experience and/or trial mixtures. Do not make changes in proportions without submitting proposed changes to Inspection and Testing Laboratory for evaluation.

1. Trial mixtures having proportions and consistencies suitable for the work shall be made based on ACI 211. 1, using at least three (3) different water-cement ratios which will produce a range of strengths encompassing those required for this project.
2. Trial mixes shall be designed to produce a slump within 3/4 inch of the maximum permitted, and for air-entrained concrete, within 0.5 percent of maximum allowable air content. The temperature of concrete used in trial batches shall not exceed the maximum temperature specified.
3. For each water-cement ratio, at least three confirmation compression test cylinders for each test age shall be made and cured in accordance with ASTM C192. Confirmation cylinders shall be tested at seven (7) and 28 days in accordance with ASTM C39.
4. From the results of the 28 day confirmation tests, a curve shall be plotted showing the relationship between the water-cement ratio and compressive strengths. From this curve, the water-cement ratio to be used in the concrete shall be selected to produce the average strength required.
5. The cement content and mixture proportions to be used shall be such that this water-cement ratio is not exceeded when slump is the maximum permitted. Control in the field shall be based upon maintenance of proper cement, water content, slump and air content.
6. Mix designs furnished by the concrete supplier, shall be based on the standard deviation analysis of previous test records meeting the requirements of Section 5.3.1 - Standard deviation of ACI 318. These mixes will be accepted in lieu of trial mixtures described in paragraphs above.
    a. Temperature of concrete in test data shall be within 5 degrees F of maximum temperature specified for this project.
    b. Strengths indicated in test data shall be in accordance with ACI 318, Section 5.3.
    c. The specified strength of concrete used in supporting test data shall vary no more than 500 PSI plus or minus from that specified for this project.
    d. The Testing Laboratory shall keep a strength and standard deviation record of all concrete for the duration of the project as specified in this section.

PART 3 - EXECUTION

3.1 GENERAL

A. Inserts: Give the various trades and subcontractors ample notification and opportunity to furnish all anchors, nailers, pipes, conduits, boxes, inserts, thimbles, sleeves, frame vents, wires, supports, or other items required to be built into the concrete by the provisions of

the Drawings or of the Specification governing the work of such trades and subcontractors, or as it may be necessary for the proper execution of their work. Obtain suitable templates or instructions for the installation of such items which are required to be placed in the forms.

B. Install under-slab vapor retarder as instructed by manufacturer in accordance with ASTM E1643. Penetrations shall be sealed to maintain integrity of barrier. Tape around all openings and seal all penetrations as instructed by the barrier manufacturer. Grade stakes shall not be driven through the vapor barrier. Avoid punctures during reinforcement and concrete placement.

C. Slump:
   1. Concrete not containing a high range water reducing admixture shall not be placed when its plasticity, as measured by slump test, is outside the following limits:
      a. Footings: 6 inches maximum, 4 inches minimum.
      b. All other Structural Concrete: 5 inches maximum, 3 inches minimum.
      c. Pavement: 4 inches maximum. Coordinate slump with requirements in Section 32 13 13, Concrete Paving.
      d. Slump drop not to exceed 2 inches when pumped.
   2. Concrete containing a high range water reducing admixture shall not be placed when its plasticity, as measured by slump test, is outside the following limits:
      a. Prior to addition high range water reducer: 3 inches maximum, 2 inches minimum.
      b. After addition of high range water reducer: 9 inches maximum.

D. Classes of Concrete and Usage: Concrete of the several classes of concrete required shall have the characteristics shown on the Drawings.

E. Mixing:
   1. Transit-mixed concrete conforming to the requirements of ASTM C94 and ACI 304 shall be used in lieu of concrete mixed at the job site. Concrete shall not be transported or used in any case after a period in excess of 90 minutes has elapsed after the introduction of water into the mixer.
   2. Indiscriminate addition of water to increase slump of concrete is prohibited. Add water only at the direction of the Testing Laboratory. No water shall be added which increases the water cement ratio of the concrete in excess of the water cement ratio indicated on the approved mix design. At the direction of the Inspection and Testing Laboratory the addition of a high range water reducing admixture may be used to retemper concrete.
   3. The agency supplying transit-mixed concrete shall have a plant of sufficient capacity and adequate transportation facilities, to assure continuous delivery at the rate required. The frequency of deliveries to the site of the work must be such as to provide for placing the concrete continuously throughout any one (1) pour.

F. Conveying Concrete: Convey concrete from the mixer to the place of final deposit by methods which will prevent the separation or loss of the ingredients. Concrete to be conveyed by pumping shall be submitted to the Inspection and Testing Laboratory for evaluation for each class of concrete specified before being used. Test cylinders for pumped concrete shall be taken at the discharge end of the pumping equipment.

G. Equipment for chuting, pumping, and pneumatically conveying concrete shall be of such size and design as to assure a practically continuous flow of concrete at the delivery end without separation of the materials. The use of gravity-flow or aluminum chutes or conveyors for transporting concrete horizontally will not be permitted.

H. Miscellaneous Materials and Accessories: If not specifically noted, install all materials and accessories per manufacturer’s instructions as if noted here in full.

I. Extend under slab vapor barrier continuously under entire slab, slab turn downs, vertical face of grade beams and footings to completely protect concrete adjacent to earth. Overlap joints and install seam tape and pipe boots, and seal penetrations as instructed by manufacturer.

J. Bars shall be supported on chairs or spacers on metal hangers, accurately placed and securely fastened to steel reinforcement in place. No wood or clay brick will be permitted inside forms.

K. All reinforcing shall be set in place, spaced, and rigidly and securely tied or wired at all splices and at all crossing points and intersections.

L. Minimum center to center distance between parallel bars shall be in accordance with the details on the drawings. Where not shown, the clear spacing shall be 1-1/2 times the bar diameter but never less than 1-1/2 inches.

M. Lap of splices where shown and noted on the drawings shall be a minimum of 32 bar diameters but never less than 12 inches.

N. Except where shown on the drawings, minimum concrete coverage for reinforcing steel shall be:

1. 3 inches…where concrete is placed against earth
2. 1-1/2 inches…over column ties
3. 1-1/2 inches…for #5 and smaller bars in formed walls
4. 2 inches…for all bars larger than #5 in formed walls
5. 1 inch…for #11 and smaller bars in suspended slabs
6. 1-1/2 inches…for all bars larger than #11 in suspended slabs

3.2 CONCRETE CONTROL AND TESTING

A. Inspection and Testing laboratory services shall be in accordance with Section 01 45 23, Testing and Inspecting Services.

B. Except as noted below, all inspection and testing related to concrete placement, including reinforcing and embedded items, shall be the responsibility of the Owner. The Owner will directly engage the services of a qualified Testing and Inspection Laboratory, however, the Contractor shall provide access to the Owner’s consultant, and, if required, the Contractor shall provide patching and repairing of surfaces removed to facilitate testing and inspection.

C. Should the strength of concrete fall below the minimum, then additional tests, including load tests, may be required. These tests, if required, shall be made at the Contractor's expense and shall be in accordance with ASTM C42 and ACI 318. If tests do not meet the applicable requirements, then the structure, or any part of the structure, shall be removed and replaced at the Contractor's expense.

D. Any concrete testing requested by the Contractor for early formwork or shoring removal, etc., shall be at the Contractor's expense.

E. Do not permit placement of concrete having a measured slump outside limits given on Drawings or Specifications, except when approved by Architect/Engineer.

3.3 PLACING CONCRETE

A. Place concrete in reasonably uniform layers, approximately horizontal, and not more than 18 inches deep, exercising care to avoid vertical joints or inclined planes. The piling up of concrete in the forms in such a manner as to cause the separation or loss of any of its ingredients will not be permitted. Concrete which has partially set or hardened shall not, under any circumstances, be deposited in the work. All slabs shall be placed for full thickness in one operation without change in proportions, screeded to proper elevation, and floated. Dusting of surfaces with cement is prohibited.

B. Place concrete in the forms as nearly in its final position as is practical to avoid rehandling. Exercise special care to prevent splashing the forms or reinforcement with concrete. Remove any hardened or partially hardened concrete which has accumulated on the forms or reinforcement before the work proceeds. Do not place concrete on previously deposited concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the respective member of section, except as hereinafter specified.

C. Do not permit concrete to drop freely any distance greater than five (5) feet. Where longer drops are necessary, use a chute, tremie, or other acceptable conveyance to assist the concrete into place without separation. Do not pour directly into any excavations where water is standing.

D. Vibration: As soon as concrete is deposited, thoroughly agitate same by means of mechanical vibrators and suitable hand tools, so manipulated as to work the mixture well into all parts and corners of the forms, and entirely around the reinforcement and inserts. Mechanical vibrators shall maintain frequencies in accordance with the recommendations of ACI 309. Table 5.1.4, and shall be operated by competent workmen. Over vibrating and use of vibrators to transport concrete within forms shall not be allowed. A spare vibrator shall be kept on the job site during all concrete placing operations.

E. Bonding: Before depositing any new concrete on or against previously deposited concrete which has partially or entirely set, the surface of the latter shall be thoroughly roughened and cleaned of all foreign matter, scum and laitance. The specified or an Architect approved bonding agent or epoxy adhesive shall be used.

F. Construction Joints: Except as otherwise specifically indicated on the Drawings, each concrete member shall be considered as a single unit of operation, and all concrete for the same shall be placed continuously in order that such unit will be monolithic in construction. Should construction joints prove to be absolutely unavoidable, same shall be located at or near the midpoints of spans. Additional construction joints shall not be made under any circumstances without prior review by the Architect.

G. Protect all freshly placed concrete from washing by rain, flowing water, etc. Do not allow the concrete to dry out from the time it is deposited in the forms until the expiration of the curing period.

H. Imperfect or damaged work, or any material damaged or determined to be defective before final completion and acceptance of the entire job, shall be satisfactorily replaced at the Contractor's expense and shall be in conformity with all of the requirements of the Contract Documents. Removal and replacement of concrete work shall be done in such a manner as not to impair the appearance or strength of the structure in any way.

I. Cleaning: Upon completion of the work, all forms, equipment, protective coverings and any rubbish resulting therefrom shall be removed from the premises. Finished concrete surfaces shall be left in clean and perfect condition, satisfactory to the Owner. Sweep with an ordinary broom and remove all mortar, concrete droppings, loose dirt, mud, etc.

3.4 FLOOR AND SLAB FINISHES

A. Scratch Finish: Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and as otherwise indicated.

1. After placing slabs, surface shall be leveled to an F_F 15 - F_L 13 tolerance. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set, with stiff brushes, brooms or rakes.

B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, or sand-bed terrazzo, and as otherwise indicated.

1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture. Surface shall achieve an F_F 20 – F_L 17 tolerance.

C. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system.
1. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final troweling operation, free of trowel marks, uniform in texture and appearance and to a F_F 35/ F_L 30 tolerance (F_L 17 for elevated slabs). Grind smooth surface defects, which would telegraph through applied floor covering system.

D. Non-Slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms, steps and ramps, exterior dugout slabs, and elsewhere as indicated.
1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application. A sample panel is required.

E. Liquid Densifier/Sealer: Apply liquid densifier/sealer on exposed interior floors subject to vehicular abrasion and as indicated on the Drawings. Compound shall be mechanically scrubbed into the surface in strict accordance with the directions of the manufacturer and just prior to completion of construction.

F. Non-Oxidizing Metallic Floor Hardener: All slabs, in the loading dock area, or other areas noted on the Drawings, shall receive an application of the non-oxidizing, metallic floor hardener applied in accordance with manufacturer's instructions to produce a smooth dense finish.

3.5 NON-SHRINK GROUT

A. Refer to Structural Drawings for column base plates and other structural grouting requirements.

B. Non-shrink grout shall be mixed only in such quantities as are needed for immediate use. No retempering shall be permitted and materials which have been mixed for a period exceeding 30 minutes shall in no case be used upon any portion of the work.

C. Where high fluidity and/or increased placing time is required use the specified high flow grout. This grout shall be used for all base plates larger than ten (10) square feet.

D. For every 1/3 cubic yards of grout placed, grout strength shall be tested with a set of cubes as follows:
1. A set of cubes shall consist of three cubes to be tested seven (7) days, and three (3) cubes to be tested at 28 days.
2. Test cubes shall be made and tested in accordance with ASTM C1107, Section 12.5, with the exception that the grout should be restrained from expansion by a top plate.

3.6 CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. All concrete shall be kept continuously moist and above 50 degrees F for

seven days. When high early strength concrete is used this temperature requirement may be lowered to three (3) days.

B. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.

1. Provide specified curing compound to exposed interior slabs. This curing compound must be dissipating or easily removed in the cleaning process prior to the application of any liquid densifier/ sealer.

3.7 DEFECTIVE WORK

A. Imperfect or damaged work, or any material damaged or determined to be defective before final completion and acceptance of the entire job, shall be satisfactorily replaced at the Contractor's expense and shall be in conformity with all of the requirements of the Contract Documents. Removal and replacement of concrete work shall be done in such a manner as not to impair the appearance or strength of the structure in any way.

3.8 CLEANING

A. Upon completion of the work, all forms, equipment, protective coverings and any rubbish resulting therefrom, shall be removed from the premises. Finished concrete surfaces shall be left in clean and perfect condition, satisfactory to the Owner. Sweep with an ordinary broom and remove all mortar, concrete droppings, loose dirt, mud, etc.

3.9 REPAIR OF DEFECTIVE AREAS

A. With prior approval of the Architect/Engineer, as to method and procedure, all repairs of defective areas shall conform to ACI 301, Section 5.3.7, using the polymer repair mortars and/or epoxy adhesives furnished by The Euclid Chemical Company, Sika Chemical Corp., or Architect approved equal.

3.10 FIELD QUALITY CONTROL AND TESTING

A. Inspection and Testing Laboratory services shall be in accordance with Section 01 45 23, Testing and Inspecting Services.

END OF SECTION 03300

SECTION 03320 - UNDER-SLAB VAPOR BARRIER

PART 1 – GENERAL

1.1 SUMMARY

A. Products Supplied Under This Section:
   1. Vapor Barrier, seam tape, mastic, pipe boots, and detail strip for installation under concrete slabs.
   2. Provide this product in lieu of the products specified in section 03300 Cast-In-Place Concrete and noted on the drawings.

B. Related Sections:
   1. Section 03300 Cast-In-Place Concrete

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM E 1745 – Standard specification for plastic water vapor used in contact with soil or granular fill under concrete slabs.
   2. ASTM E 154 – Standard test methods for water vapor used in contact with earth under concrete slabs.
   3. ASTM E96 – Standard test methods for water vapor transmission of materials.
   4. ASTM E 1643 – Standard practice for installation of water vapor used in contact with earth or granular fill under concrete slabs.

B. American Concrete Institute (ACI):
   1. ACI 302.1 R-15 - Vapor barrier component (plastic membrane).

1.3 SUBMITTALS

A. Quality Control/Assurance:
   1. Independent laboratory test results showing compliance with ASTM & ACI Standards.
   2. Manufacturer's samples, product literature, installation instructions for placement, seaming and pipe boot installation.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Vapor Barrier:
   1. Vapor Barrier membrane must have the following properties:
      a. Manufactured from prime virgin resins
      b. Water Vapor Barrier: ASTM E-1745 Meets or exceeds Class A
      c. Water Vapor Transmission Rate: ASTM F-1249 0.0054 perms or lower
      d. Puncture Resistance: ASTM E-1709 minimum 2326 grams
      e. Tensile Strength: ASTM D-882 minimum 79.6 lbf/in
      f. Permeance after condition test: ASTM E-1745 0.01 perms or lower

B. Vapor Barrier Products:
   1. Stego Wrap Vapor Barrier (15 mil) by Stego Industries LLC (Basis-of-design)
   2. Perminator (15 mil) by W.R. Meadows
   3. Insulation Solutions; Viper II - 15 mil class A.
   4. Prior approved equal

2.2 ACCESSORIES

A. Provide Seam Tape and Vapor Proofing Mastic as recommended by vapor barrier manufacturer.
B. Pipe Boots: Construct pipe boots from vapor barrier material, pressure sensitive tape and/or mastic per manufacturer's instructions.

PART 3 - EXECUTION

3.1 PREPARATION

A. Ensure that subsoil meets specification standards prior to proceeding.
B. Level and tamp or roll aggregate, sand or tamped earth base.

3.2 INSTALLATION

A. Install Vapor Barrier:
   1. Installation shall be in accordance with manufacturer's instructions.
   2. Unroll Vapor Barrier with the longest dimension parallel with the direction of the pour.
   3. Lap Vapor Barrier over footings and seal to foundation walls.
   4. Overlap joints 6 inches and seal with manufacturer's tape.
   5. Seal all penetrations (including pipes) per manufacturer's instructions.
   6. No penetration of the Vapor Barrier is allowed except for reinforcing steel and permanent utilities.
   7. Repair damaged areas by cutting patches of Vapor Barrier, overlapping damaged area 6 inches and taping all four sides with tape.

END OF SECTION 03320

SECTION 03350 - CONCRETE PAVING

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Concrete paving, including, but not limited to parking lots, aprons, sidewalks, curbs, handicapped accessible ramps, approaches, and miscellaneous exterior concrete shown on drawings.

B. Traffic lane and parking space paint striping, including, but not limited to painting of curbs and stenciling of signs stipulating FIRE LANES, NO PARKING and BUS LOADING areas, crosswalks, handicapped accessible parking spaces, and other areas shown on drawings or required by authorities having jurisdiction.

C. Precast concrete wheel stops and accessories shown on drawings.

1.2 QUALITY ASSURANCE

A. Where standards or requirements of this Section are in conflict with those noted on the Contract Drawings, or the Building Code, the more stringent requirements shall govern. Bring all conflicts and discrepancies to the attention of the Architect and do not start work until such conflicts and discrepancies are clarified and corrected. Failure to do so will not relieve the Contractor from performing the Work correctly at no additional expense to the Owner.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials (AASHTO)
   1. M-90
   2. M-213

B. American Concrete Institute (ACI)
   1. 305, Hot Weather Concreting
   2. 306, Cold Weather Concreting

C. ASTM International (ASTM)
   1. A185, Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
   2. A615, Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
   3. C33, Standard Specification for Concrete Aggregates
   4. C94, Standard Specification for Ready-Mixed Concrete
   5. C150, Standard Specification for Portland Cement
   6. C260, Standard Specification for Air-Entraining Admixtures for Concrete
   7. C309, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
   8. C494, Standard Specification for Chemical Admixtures for Concrete
   9. C881, Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

10. C920, Standard Specification for Elastomeric Joint Sealants
11. C979, Standard Specification for Pigments for Integrally Colored Concrete

D. Federal Specifications (FS)
1. TT-S-00227E, Elastomeric Joint Sealants
2. TT-P-1952B, Traffic and Airfield Marking Paint, Water Emulsion Base

1.5 PROJECT CONDITIONS

A. Do not place concrete in contact with frozen earth. Do not commence concrete placement unless temperature is at least 35 degrees F and rising, or slabs until the temperature rises above 40 degrees F.

B. Discontinue concrete placement when air temperatures exceed 100 degrees F.

C. Dispose of any concrete that exceeds 95 degrees F as determined by Architect in field.

D. Do not place concrete during rain.

E. Cold Weather Placing: Comply with ACI 306 to protect all concrete work from physical damage and reduce strength caused by frost, freezing actions, or low temperatures. Place no concrete against frozen earth.

F. Hot Weather Placing: Prepare aggregates, mix water and other ingredients, and place, cure, and protect concrete in accordance with the requirements of ACI 305.

G. Do not apply traffic or zone marking paint on wet or damp surfaces or when rain is imminent. Do not commence painting operations until material, air, and/or surface temperature and dew point are within paint manufacturer's recommended application limits.

1.6 TESTS AND INSPECTIONS

A. Before starting any work under this section, make all required arrangements with testing agency. Provide testing laboratory with certified reports on proposed cements, aggregates mixing water and admixtures.

B. Lab shall review design mixes for each type of concrete using previously tested and approved materials.

C. The testing lab will proportion mixes by laboratory trial batch, using materials to be employed in the work for each class of concrete required and reporting to Architect.
1. Concrete Compression Test - 7 day and 28 day
2. Concrete Slump Test
3. Concrete Air Content

D. Furnish certified reports of format shown herein of each proposed mix for each type of concrete at least 30 days prior to start of installation of the Work of this Section.

E. Furnish ready mix delivery tickets to field Architect upon request.

1.7 SUBMITTALS

A. Product Data: Manufacturer's descriptive literature for concrete admixtures.

B. Shop Drawings: Show locations and installation procedures. Include details of joints, accessories, reinforcement, and clearances. Include concrete placement sequence schedule.

C. Concrete Design Mix Reports:
1. One (1) for each type of concrete to be used.

D. Submit product data and shop drawings for ALL items to be installed.

1.8 INSTALLATION CONFERENCE

A. Refer to Section_____ Project Coordination

B. Required Participants:
1. General Contractor Superintendent
2. Placement and Finishing Foreman
3. Concrete Supplier
4. Testing Lab

1.9 MEASUREMENT AND PAYMENT

A. No separate measurement or payment will be made for materials and labor performed under this section. Include all costs in the lump sum price.

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURERS

A. Manufacturers named within this Section are approved for use on the Project for the product for which they are specified. Other manufacturers must have a minimum of five (5) years experience manufacturing the product specified and meet or exceed the specifications for that product. Substitution of products must be in accordance with the General Conditions, Supplementary Conditions, and Section 01 33 00, Submittals to be considered prior to proposal.

2.2 MATERIALS

A. Formwork:
1. General: Contractor may use any of the following formwork materials as long as material meets the following and will not stain, or impart any undesirable texture, i.e. wood grain, where such texture would be objectionable in an exposed location.
a. Wood Forms:
1) Plywood: PS 1, Douglas Fir or Spruce species.
2) Medium Density Overlay (MDO): One (1) side grade; sound undamaged sheets with clean, true edges.
3) Lumber: Southern Yellow Pine species; No. 2 grade, with grade

stamp clearly visible.

b. Pre-Fabricated Forms:
   1) Preformed Steel Forms: Minimum 16 gauge matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
   2) Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.

B. Metal Reinforcement:
1. Bars:
   a. Conform to ACI 315, latest edition.
   b. Comply with ASTM A615, Grade 60, deformed billet steel bars, unfinished, except Number 3 bars shall comply with ASTM A615, Grade 40, deformed billet steel bars, unfinished.
2. Tie Wire: 16 gauge annealed.

C. Concrete Materials (Other than concrete for extruded curbs, unless noted otherwise)
1. Cement: Type 1, ASTM C150, unless approved otherwise by Architect. Use one (1) brand of cement for entire project.
2. Concrete Admixtures: Provide admixtures produced and serviced by established, reputable manufacturer and used in compliance with manufacturer's recommendations.
   a. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures. Provide one (1) of the following, or Architect approved equal:
      1) AEA-92 and Air Mix 200 by The Euclid Chemical Co.
      2) Sika AEA by Sika Corp.
      3) MB-VR or MB-AE by Master Builders, Inc.
   b. Water-Reducing Admixture: ASTM C494, Type A, and containing not more than 0.05 percent chloride ions. Provide one (1) of the following, or Architect approved equal:
      1) Eucon WR 75 or Eucon WR 91 by the Euclid Chemical Co.
      2) Pozzolith 322N by Master Builders, Inc.
      3) Plastocrete 161 by Sika Chemical Corp.
   c. High-Range Water-Reducing Admixture (Superplasticizer): ASTM C494, Type F or Type G and containing not more than 0.05 percent chloride ions. Provide one (1) of the following, or Architect approved equal:
      1) Eucon 37 by The Euclid Chemical Co.
      2) Sikament 300 by Sika Chemical Corp.
      3) Rheobuild 1000 by Master Builders, Inc.
3. Prohibited Admixtures: Calcium chloride, thiocyanates or admixtures containing more than 0.05 percent chloride ions are not permitted.
4. Integral Color Pigment (Required for new concrete handicapped accessibility ramps): Mineral oxide, lightfast, lime-proof, water-resistant type conforming to ASTM C979. Color(s) shall be as selected by Architect from manufacturer’s standard color line. Provide one (1) of the following, or Architect approved equal:
   a. ChemSystems, Inc.
   b. Davis Colors
   c. New Riverside Ochre Co., Inc.

d. L.M. Scofield Company

5. Color Stain (Required for existing concrete handicapped accessibility ramps): A penetrating acrylic concrete stain, designed for adding color to existing concrete. Color(s) shall be as selected by Architect from manufacturer's standard color line. Provide H & C Silicone Acrylic Concrete Stain manufactured by Sherwin Williams, or Architect approved equal.
6. Aggregates:
   a. Comply with ASTM C33
   b. Maximum size not larger than 1/5 of narrowest dimension between forms of the member for which concrete is to be used. Not larger than 3/4 of minimum clear spacing between reinforcing bars.
   c. 1-1/2 inch maximum in paving slabs.
7. Strengths:
   a. Five and a half (5.5) sack (shall contain no less than 5.5 sacks of Portland cement)/4,000 psi/28 days.
   b. Strength recommendations on Drawings supersede when they are greater than specified here.
8. Water: Drinking quality.
9. Water - Cement Ratio (lb water per lb of Portland cement):
   a. 0.52 Maximum
10. Slump:
    a. Slump shall be 4 inches plus or minus 1 inch, unless specifically noted otherwise.

D. Joints:
1. Construction Joints and Expansion Joints: Refer to Paragraph on Accessories below.
2. Tooled Control Joint: Scored 1/4 inch wide x 1/4 thickness of concrete in depth.

E. Accessories:
1. Chairs and Spacers: Heavy-duty plastic-type sized to support all reinforcing steel to proper height directly on properly prepared and compacted subgrade. No sand cushion pads will be permitted. Provide chairs and spacers Series "B" by W.H.C. Products, Inc., E-Z Chair by Aztec Concrete Accessories, Inc., MEDCO PC-4 by Meadow Burke, a Division of MMI Products, GTI Bar Chair by General Technologies, Inc., or approved equivalent. Maximum spacing of chairs shall be 36-inches on center each way.
2. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture.
3. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages, Fasteners: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.
4. Epoxy Adhesive: ASTM C881, two (2) component, 100 percent solids, 100 percent reactive compound suitable for use on dry or damp surfaces. Provide one (1) of the following, or approved equal:
   a. Euco #452 Epoxy System or Euco #620 Epoxy System by The Euclid Chemical Company
   b. Sikadur Hi-Mod by Sika Corp.
5. Expansion Joints:
   a. Fiber Joint Filler: Premolded asphalt impregnated rigid fiber board. Comply with AASHTO M-213. Use 3/4 inch thick at expansion joints

adjacent to extruded curbs, 1/2 inch thick at perimeter of footings for ground-set items such as bollards and fence posts where such footings are incorporated into slabs; elsewhere as shown.

b. Wood Expansion Joints: Where indicated in the drawing provide construction clear heart grade redwood joints conforming to AASHTO M-90. Provide sizes indicated on drawings. Do not install adjacent to curbs.

c. Joint Sealant: Shall be a self-leveling silicone base, cold-applied joint sealing compound complying with No. 890-SL Self-Leveling Silicone Joint Sealant as manufactured by Dow Corning, or approved equal.

6. Load Transfer Units:

a. Light Duty (sidewalk):
3/4 inch thick clear heart redwood expansion joint form with minimum one (1) inch deep removable top strip, 1/2 inch x 10 inch smooth steel reinforcing bars at 12 inches on center +/- with bond breaker sleeve on one (1) side, and 3/32 inch thick steel bar-support plates each side. Provide custom size as required for full depth of paving and sealant depth as required by sealant manufacturer.

b. Medium Duty (Auto) / Heavy Duty (truck/bus traffic):
3/4 inch thick redwood expansion joint form with minimum one (1) inch deep removable top strip, 3/4 inch by 18 inch steel reinforcing bars at 12 inches on center+/- with bond-breaker sleeve on one (1) side and 3/16 inch steel bar-support plates each side. Provide custom size as required for full depth of paving and sealant depth as required by sealant manufacturer.

F. Curing Compound: The compound shall conform to ASTM C309-1315, Type II (A.I.M. Regulations - VOC Compliant). Provide 1600 White by W. R. Meadows, Inc., or equal products by Master Builders, Dayton Superior, or approved equal.

G. Other Materials: Provide all items required to complete work which is not specified or which is not to be provided by other trades.

H. Extruded Concrete Curbs:

1. Materials:
   a. Portland Cement: ASTM C150, Type I.
   b. Aggregate: ASTM C33.
   c. Water: Clean, free of contaminating material.
2. Epoxy Adhesive: As specified under concrete materials above.
3. Concrete Mixing:
   a. Slump: No slump allowed.
4. Curing Compound: As specified under concrete materials above.

I. Traffic and Zone Marking Paint: (As shown on drawings or required)

1. Type: chlorinated rubber paint conforming to the requirements of TT-P-115E. Sherwin Williams product Setfast Chlorinated Rubber Zone Marking Paint TM5126 – White and TM5127 – Yellow.or approved equal.
2. Stripe Size: Four (4) inches wide for traffic and parking lanes, unless noted otherwise.
3. Colors:
   a. Traffic and Parking Striping / crosswalks, directional arrows: White or as selected by Architect.

b. Fire Lanes: All curbs at driveways adjacent to building shall be painted solid red with white stenciled lettering to read “FIRE LANE, NO PARKING” in size and spacing required by authorities having jurisdiction. Contractor to verify requirements of local jurisdiction for fire lane striping.

c. Accessibility Handicapped Parking: Symbols and spaces shall be in size and color in accordance with ADA and TAS authorities having jurisdiction.

J. Precast Concrete Wheel Stops: (As shown on drawings or required)

1. Precast of 3,000 psi air-entrained concrete, approximately 6 inches high x 9 inches wide x 6 feet-0 inches long, with chamfered top corners and drainage slots underneath. Unit shall weigh minimum 190 lbs.
2. Anchor Rods: Two (2) No. 4 by 12 inch long anchor rods located approximately 12 inches from each end of wheel stop.
3. Epoxy Adhesive: As specified under concrete materials above.

K. ADA Detectable Warning Paver

1. As produced by Pavestone or approved Equal.
2. Color as approved by Architect.

PART 3 - EXECUTION

3.1 PREPARATION

A. Review approved mix designs with Architect in field.

B. Clean all mixing and transportation equipment; remove debris from forms; wet forms thoroughly; remove ice and other coatings from reinforcement which might hinder good bond; remove water from place of deposit; and check reinforcement.

C. Inspection: Examine all areas and conditions under which the Work of this Section will be performed. Correct any conditions detrimental to the approved completion of the work. Do not proceed until all such conditions are corrected.

D. If thickness of concrete pavement is not labeled on the drawings, the thickness shall be 6-inch thick.

3.2 INSTALLATION

A. Forms:

1. Conform to the shapes, lines and dimensions of the members as shown on the drawings, except as modified under the Earthwork Section of these specifications. Review depths with Architect in field.
2. Care shall be taken to assure that formwork does not stain concrete surfaces.
3. Slab Block-Outs:
   a. Diamond configuration at paving drains, round or diamond configuration at bollards, fence posts and the like.
   b. Coordinate with concrete joints, verify with Architect.
4. Slope exterior concrete slabs away from building and towards paving drains. Verify all slopes with Architect prior to start of concrete pour.
5. Form Removal:

a. Remove only after concrete has thoroughly hardened.
b. Vertical forms for ground-supported slabs may be removed 24 hours after pour.

B. Reinforcing:
1. Cleaning Reinforcement: Free from rust, scale, dirt, or other coatings which will destroy or reduce the bond.
2. Placing Reinforcement:
a. Place accurately and adequately secure in position.
b. Bar reinforcement in all concrete slabs shall be held in proper locations by use of plastic chairs spaced a maximum distance of 36 inches on center unless noted otherwise.
3. Coverage of Reinforcement: The metal reinforcement shall be protected by the thickness of concrete indicated on the plans.
a. Three (3) inches: Concrete deposited against ground without use of forms.
b. Two (2) inches: Bars more than 5/8 inch diameter where concrete is exposed to the weather, or exposed to the ground but placed in forms.
c. 1-1/2 inches: Bars 5/8 inch diameter where concrete is exposed to the weather, or exposed to the ground but placed in forms.
d. Two (2) inches: In slabs and walks on grade.
e. 1-1/2 inches-1-3/4 inches from top: Paving

C. Joints:
1. Construction Joints:
a. Shall occur at expansion joints.
b. Use at cold joints in paving slabs.
2. Expansion Joints:
a. Locate fiber joint filler type where walks and paving abut curbs and at perimeter of slab infill. Joints shall be continuous and full depth and width of slab. Stop 3/4 inch thick fillers 1/2 inch below top of paving and 1/2 inch thick fillers 3/8 inch below top of paving for subsequent application of sealant cap; sealant to be applied to within 1/8 inch of slab surface. Verify other locations with Architect where asphalt impregnated fiber joint filler and sealant cap is to be used.
b. Locate redwood expansion joints at paving and walk expansion joints where indicated, complete with load transfer units as specified herein and detailed. Joints shall be continuous and full depth and width of slab. Except where detailed without sealant cap, stop expansion joints 1/2 inch below top of paving for subsequent application of sealant cap. Top surface of sealant shall be approximately 1/8 inch below top of adjacent concrete. Install sealant in accordance with manufacturer's instructions. For applications where no sealant cap is to be applied, stop expansion joints 1/8 inch below top of paving surface. Verify other locations with Architect where redwood expansion joint and sealer cap is to be used.
c. Install redwood expansion joints 5 feet either side of water lines under pavement.
3. Load Transfer Units: Install straight and true, and in accordance with manufacturer's instructions.
4. Tooled Joints:
a. Steel tool all control joints, edges of expansion joints, and all exposed perimeter edges to smooth bullnose, using an edger having a radius of

1/4 inch, as approved.

b. Form control joints in uniform straight lines in locations indicated, but in no case greater than 5 feet apart, uniformly spaced.

D. Accessories: Install accessories and boxes, sleeves and other required devices furnished by other trades.

E. Concrete:

1. Conveying:
   a. Batching, mixing and Delivery Equipment: Use transit mixed concrete from approved batching and mixing plant. Batch, mix and transport concrete to the site in accordance with provision of ASTM C94.
   b. Where colored concrete is shown or required, i.e. accessible ramps, use color pigment admixture in concrete. Mix color pigment into concrete in accordance with manufacturer's recommendations to achieve integrally pigmented concrete in specified colors or as selected by Architect.
   c. Handling concrete from point of delivery and transfer to conveying equipment and to location of final deposit as rapidly as practicable and by methods which prevent segregation and loss of mix materials.
   d. Provide runways for wheeled conveying equipment from delivery point to location of final deposit.
   e. Keep interior surfaces of conveying equipment, including chutes and tremies, free from hardened concrete, debris, water and other deleterious materials.
   f. Pumps may be used only if they can pump the mix designed. Do not add fine aggregate or water to the mix to satisfy needs of a pumping device.
   g. Use chutes or tremies for placing concrete where a drop of more than 6'-0" is required.
   h. Addition of water on the job - The maximum water-cement ratio should never be exceeded. If all the water allowed by the specification has not been added at the start of mixing, it may be permissible to add the remaining allowable water at the point of delivery.
2. Concrete Placement, General:
   a. Place concrete in compliance with practices and recommendations of ACI 304, and as specified herein.
   b. Do not deposit concrete on concrete which has hardened sufficiently to form seams or planes of weakness within the section.
   c. Sections between expansion joints shall be placed in continuous pours; construction joints in paving and walks other than at expansion joint locations will not be permitted.
   d. Place concrete at such a rate that concrete which is being integrated with fresh concrete is still plastic.
   e. Deposit concrete as nearly as practicable in its final location to avoid segregation due to rehandling and flowing. Do not subject concrete to any procedure which might cause segregation.
   f. Screed concrete which is to receive other construction to the proper level to avoid excessive skimming and grouting.
   g. Do not use concrete which becomes nonplastic and unworkable, or does not meet the required quality control limits, or which has been contaminated by foreign materials.
3. Slab Placement:
   a. Moisten subgrade the evening before and immediately prior to placement

of all paving slabs.

b. Deposit and consolidate concrete slabs in a continuous operation, within the limits of all expansion joints, until the placing of a panel or section is completed using vibrating bridge screeds, roller pipe screeds or other methods acceptable to Architect.

c. Consolidate concrete during placement by use of the specified equipment, preferably with power driven floats of impact type, thoroughly working concrete around reinforcement and into corners.

d. Bring slab surfaces to correct level with a straight edge, and then strike off.

e. Use bullfloats or darbies to smooth the surface, leaving it free from bumps and hollows.

f. Do not sprinkle water on the plastic surface; do not disturb the slab surfaces prior to start of finishing operations.

4. Extruded Curb Placement:

a. Install to detail in locations shown.

b. Apply epoxy resin adhesive to paved surface prior to extruding curb.

c. Machine extrude concrete to shape detailed on Drawings, as approved. Trowel form concrete curbs in areas where machine cannot reach.

d. Install premolded expansion joints where curbs meet poured-in-place concrete and at 60 lineal feet maximum spacing; elsewhere where indicated.

e. Cut crack control joints every 20 lineal feet and at beginning of curves with less than five (5) foot radius.

f. Hand trowel rough areas to a dense, uniform texture. Bevel curbs 45 degrees at dead ends.

g. Spray apply membrane forming curing compound after curb installation.

h. Remove and replace curbs which crack; cut out chipped or cracked areas and reinstall new extruded curbs.

i. Remove excess concrete from paving surfaces.

F. Curing:

1. General:

a. Protect all freshly placed concrete from premature drying and excessive hot or cold temperature extremes. Start curing procedures on slabs immediately after finishing operation.

b. Maintain curing procedures for seven (7) days at minimum temperature of 50 degrees F.; if mean daily temperature drops below 40 degrees F. during this period, extend curing period an equal number of days or provide temporary heat or additional protection to maintain specified minimum temperature of air in contact with concrete.

2. Curing Exterior Paving and Slabs: Spray paving, walks, curbs and other miscellaneous slabs with liquid membrane-forming compound specified above, applied at not less than the manufacturer's specified and recommended rate.

G. Finishes:

1. Spreading of dry cement for finishing is not permitted.

2. Finish all exposed edges and joints with edging tools of 1/4 inch radius.

3. Exterior Paving and Slabs:

a. Floating: Do not begin floating until bleed water sheen has disappeared or until leveled material has stiffened sufficiently for power floating. After power floating, re-float by hand immediately to uniform, true,

smooth, granular surface within the specified tolerance.

b. Medium Broom Finish: Broom after floating and concrete is hard enough to retain scoring. Use a stiff fiber or wire broom. Broom perpendicular to direction of traffic, typically. Broom in opposite directions at sidewalk panels in a checkerboard pattern or as indicated on drawings.

4. Handicapped Accessible Ramps: Slope surfaces as shown on drawings. Texture ramp by providing raised, truncated domes on the surface of the ramp in accordance with TAS.
   a. New Concrete Ramps: Integrally color concrete in color selected by Architect from manufacturer's standard colors to provide contrasting color to that of adjacent concrete.
   b. Existing Concrete Ramps: Stain concrete using specified concrete stain in color selected by Architect from manufacturer's standard colors to provide contrasting color to that of adjacent concrete.
      1) Prior to applying any stain, existing concrete ramps shall be cleaned up of all dirt, oil, grease, and other contaminates.
      2) Acid etch with 25 percent muratic acid solution.
      3) Power wash at 3,000 psi.
      4) Water test to determine if water absorbs, thereby making it good to stain.
      5) Allow concrete to thoroughly dry.
      6) Apply stain in accordance with manufacturer's instructions.

   Note: All colors must be approved by Architect prior to their use. Failure to do so, may be cause for rejection of work and removal and replacement of work with new work at Contractor's expense.
5. Miscellaneous Vertical Surfaces: Finish all vertical surfaces, including but not limited to curbs, risers, low walls and stringer, while concrete is strong enough to stay in place without forms yet green and able to be finished to a homogeneous appearance.

H. Traffic Lane, Parking Space, and Zone Paint Striping: (As shown on drawings or required)
1. Surface Conditions: Clean and dry, free from dirt, loose paint, oil, grease, wax and other surface contaminants which would affect paint bond.
2. Allow concrete surfaces to cure the minimum time recommended by the traffic marking paint manufacturer, but in no case less than 30 days prior to applying traffic marking paint.
3. Locate markings as indicated on drawings. Do not apply paint until layout is verified with Architect. Protect surfaces which are not to receive paint.
4. Mix paint and apply in accordance with manufacturer's instructions, using skilled labor and proper mechanical equipment to produce uniform, straight lines without bleeding edges or runs.
5. Paint traffic, parking lanes, and accessibility handicapped parking lines as shown on drawings and to comply with requirements of authorities having jurisdiction.
6. Paint curbs and stenciled signs for FIRE LANES, NO PARKING, and BUS LOADING areas, crosswalks, handicapped accessible parking spaces, and other areas shown on drawings or required by authorities having jurisdiction. Use proper type, style and size stencils for all numbers and lettering. Do not apply paint until layout is verified with Architect and/or authorities having jurisdiction. Protect surfaces which are not to receive paint.

I. Precast Concrete Wheel Stops: (As shown on drawings or required)

1. Surface Conditions: Clean and dry, free from dirt, loose paint, oil, grease, wax and other surface contaminants which would affect epoxy bond.
2. Locate wheel stops as indicated on drawings.
3. Predrill holes in concrete paving for anchor rods.
4. Secure wheel stops in 1/8 inch thick x 3 inch wide epoxy and drive anchor rods through predrilled holes filled with epoxy grout.

J. ADA Detectable Warning Paver
1. Install per manufacturer's details and requirements.

3.3 FIELD QUALITY CONTROL

A. Inspection and Testing Laboratory:
1. Perform the appropriate tests upon notification by the Contractor.

B. Tolerances:
1. Slope as shown on drawings.
2. Paving sections containing "bird baths" greater than two (2) feet in diameter or 1/8 inch deep (regardless of size of area) will be removed and repoured at Contractor's expense.

3.4 PATCHING AND CLEANING

A. Clean exposed concrete surfaces and adjoining work stained by leakage of concrete to approval of Architect.

B. Reinforce or replace all deficient work as directed by Architect and at no additional cost to Owner.

C. Clean all concrete and cement work on completion of this portion of the work.

3.5 DEFECTIVE WORK

A. Imperfect or damaged work, as determined by the engineer, shall be satisfactorily replaced at the Contractor's expense and shall be in conformity with all of the requirements of the Contract Documents. Removal and replacement of concrete work shall be done in such a manner as not to impair the appearance or strength of the structure in any way.

3.6 PENALTY FOR DEFICIENT PAVEMENT THICKNESS

A. It is the intent of this specification that the pavement be constructed in strict conformity with the thickness and typical sections shown on drawings. Where any pavement is found not so constructed, the following rules relative to adjustment of payment for acceptable pavement and to replacement of faulty pavement shall govern.

B. Prior to final acceptance, and if deemed necessary by the Engineer, the pavement will be cored by the Testing Laboratory. Locations of core tests may be selected by the Engineer. Regular testing shall occur for every five hundred (500) square yards of placed concrete pavement and at random locations.

C. For the purpose of establishing an adjusted price for pavement, units to be considered separately are defined as 500 square yards of pavement.

D. One core will be taken at locations selected by the Engineer or at random in each unit, and tested in accordance with ASTM Method C-174. When measurement of the core from any unit is not deficient more than 0.2 inches from the plan thickness, full payment will be made.

E. If measurement of any core from any unit is deficient more than 0.2 inch but not more than 0.50 inch from the plan thickness two additional cores will be taken from the unit and the average of the three cores determined. The two additional cores will be taken such that the unit will be well represented. If the average thickness of the three cores is deficient more than 0.2 inch but not more than 0.50 inch from the plan thickness, an adjusted unit price as provided below, will be paid for in these areas represented by these cores. At the option of the Engineer, additional cores may be taken in the adjacent unit/units to determine if the deficiency of thickness continues across all lanes of pavement. If the deficiency if found to exist in one (1) or more adjacent units, adjusted unit prices as provided below will be paid for those adjacent units that are found to be deficient.

F. Price Adjustments: Concrete Pavement Deficiency

Deficiency of Thickness Determined by Cores In Inches	Proportional Part of Contract Price Allowed
0.00 to 0.20	100 Percent
0.21 to 0.30	80 Percent
0.31 to 0.40	72 Percent
0.41 to 0.50	68 Percent
Over 0.50	50 Percent or Remove*

* At the option of the Engineer

G. Any area of pavement found deficient in thickness by more than 0.50 inch, but not more than 0.75 inch, shall be evaluated by the Engineer. If, in the judgment of the Engineer, the area of such deficiency should not be removed and replaced, there will be no payment for the area retained. If, in the judgment of the Engineer, the area of such deficiency warrants removal, the area shall be removed and replaced, at the Contractor's entire expense, with concrete of the thickness shown on the drawings. Any area found deficient in thickness by more than 0.75 inch shall be removed and replaced, at the Contractor's entire expense, with concrete of the thickness shown on the drawings.

H. No additional payment, over the contract price will be made for any pavement of a thickness exceeding that required on the drawings. Also, planning of concrete pavement shall not be allowed.

END OF SECTION 03350

SECTION 04220 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Concrete masonry units, including special shape units.
2. Mortar and grout.
3. Steel reinforcing bars.
4. Masonry joint reinforcement.
5. Ties and anchors.
6. Embedded flashing.
7. Miscellaneous masonry accessories.

B. Related Sections:

1. Section 03300 "Cast-in-Place Concrete" for CMU connections with concrete slabs.

1.3 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:

1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

C. Samples for Initial Selection:

1. Weep holes/vents.
2. Flashings.
3. Weep vents.

1.5 INFORMATIONAL SUBMITTALS

A. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Architect and approved in writing.

B. Qualification Data: For testing agency.

C. Material Certificates: For each type and size of the following:

1. Masonry units.

a. Include data on material properties.
b. For masonry units, include data and calculations establishing average net-area compressive strength of units.

2. Cementitious materials. Include brand, type, and name of manufacturer.
3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
4. Grout mixes. Include description of type and proportions of ingredients.
5. Reinforcing bars.
6. Joint reinforcement.
7. Anchors, ties, and metal accessories.

D. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

E. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

F. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.

B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

D. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 "Project Management and Coordination," including completed mockups with examples of all items in this Section and relating to concrete unit masonry work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches (600 mm) down both sides of walls and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and

soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
2. Provide round-edged units at all outer/ convex corners within the buildings.
3. Provide round-edged cap units for partial height partitions.
4. Provide square-edged units for inner/ concave corners and other areas, unless otherwise indicated.

B. CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2150 psi (14.8 MPa).
2. Density Classification: Lightweight.

3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.

2.3 MASONRY LINTELS

A. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.4 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold- weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Masonry Cement: ASTM C 91.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Cemex S.A.B. de C.V.; Brikset Type N; Kosmortar Type N.
b. Essroc, Italcementi Group; Brixment or Velvet.
c. Holcim (US) Inc.; Mortamix Masonry Cement.
d. Lafarge North America Inc.; Magnolia Masonry Cement or Lafarge Masonry Cement.
e. Lehigh Cement Company; Lehigh Masonry Cement.
f. National Cement Company, Inc.; Coosa Masonry Cement.

E. Aggregate for Mortar: ASTM C 144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch (6 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18- mm) sieve.

F. Aggregate for Grout: ASTM C 404.

G. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Euclid Chemical Company (The); Accelguard 80.
b. Grace Construction Products, W. R. Grace & Co. - Conn.; Morset.
c. Sonneborn Products, BASF Aktiengesellschaft; Trimix-NCA.

H. Water: Potable.

2.5 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60 (Grade 420).

B. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.

1. Interior Walls: Hot-dip galvanized, carbon steel.
2. Exterior Walls: Hot-dip galvanized, carbon steel.
3. Wire Size for Side Rods: 0.148-inch (3.77-mm) diameter.
4. Wire Size for Cross Rods: 0.148-inch (3.77-mm) diameter.
5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (407 mm) o.c.
6. Provide in lengths of not less than 10 feet (3 m), with prefabricated corner and tee units.

C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.

2.6 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.

1. Stainless-Steel Sheet: ASTM A 666, Type 304.
2. Stainless-Steel Bars: ASTM A 276 or ASTM A 666, Type 304.

B. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.

1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch- (6.35-mm-) diameter, hot-dip galvanized steel wire.

2.7 EMBEDDED FLASHING MATERIALS

A. Single-Wythe CMU Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:

1. Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch (0.40 mm) thick.
2. Fabricate continuous flashings in sections 96 inches (2400 mm) long minimum, but not exceeding 12 feet (3.7 m). Provide splice plates at joints of formed, smooth metal flashing.
3. Fabricate through-wall flashing with drip edge unless otherwise indicated. Fabricate by extending flashing 1/2 inch (13 mm) out from wall, with outer edge bent down 30 degrees and hemmed, and interior edge 1 inch (26 mm) above the finished slab and hemmed. Interior exposed edge shall be concealed by specified quarry tile base.

B. Application: Unless otherwise indicated, use the following:

1. Where flashing is indicated to receive counterflashing, use metal flashing.
2. Where flashing is indicated to be turned down at or beyond the wall face, use

metal flashing.

C. Weeps: Pre-formed type, to be installed at 4'-0" o.c. maximum.

D. Solder and Sealants for Sheet Metal Flashings:

1. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
2. Elastomeric Sealant: ASTM C 920, chemically curing silicone sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.

B. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

C. Control Joints: Hohmann and Barnard #VS-TEE; PVC or a similar device by another manufacturer.

D. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and hold reinforcing bars in center of cells. Units are formed from 0.148-inch (3.77-mm) steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Dayton Superior Corporation, Dur-O-Wal Division; D/A 810, D/A 812 or D/A 817.
b. Heckmann Building Products Inc.; No. 376 Rebar Positioner.
c. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
d. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.

2.9 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use portland cement-lime masonry cement or mortar unless otherwise indicated.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions,

and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.

1. For reinforced masonry, use Type N.

D. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi (14 MPa).
3. Provide grout with a slump of 8 to 11 inches (203 to 279 mm) as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Build chases and recesses to accommodate items specified in this and other Sections.

B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
2. For location of elements in plan do not vary from that indicated by more than

plus or minus 1/2 inch (12 mm).

3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2 inch (12 mm) maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2 inch (12 mm) maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm).

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4-inches (100- mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm)

horizontal face dimensions at corners or jambs.

D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar before laying fresh masonry.

E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.

H. Fill cores in hollow CMUs with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, door jambs, and similar items unless otherwise indicated.

I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.

1. Install compressible filler in joint between top of partition and underside of structure above.
2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around anchors. Space anchors 32 inches (800 mm) o.c. unless otherwise indicated.
3. Wedge non-load-bearing partitions against structure above with small pieces of tile, slate, or metal. Fill joint with mortar after dead-load deflection of structure above approaches final position.

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow CMUs as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

3.6 MASONRY JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).

1. Space reinforcement not more than 16 inches (406 mm) o.c.
2. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

3.7 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:

1. Provide an open space not less than 1/2 inch (13 mm) wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches (610 mm) o.c. vertically and 36 inches (915 mm) o.c. horizontally.

3.8 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Locate control and movement joints as indicated and per the National Concrete Masonry Association recommendations.

C. Form control joints in concrete masonry as follows:

1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.

3.9 LINTELS

A. Provide masonry lintels where shown and where openings of more than 24 inches (610 mm) for block-size units are shown without structural steel or other supporting lintels.

B. Provide minimum bearing of 8 inches (200 mm) at each jamb unless otherwise indicated.

3.10 FLASHING

A. General: Install embedded flashing in masonry at lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.

B. Install flashing as follows unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through- wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
2. At lintels, extend flashing a minimum of 6 inches (150 mm) into masonry at each end. At heads and sills, extend flashing 6 inches (150 mm) at ends and turn up not less than 2 inches (50 mm) to form end dams.
3. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Section 07 92 00 "Joint Sealants" for application indicated.
4. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall and adhere flexible flashing to top of metal drip edge.
5. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall and adhere flexible flashing to top of metal flashing termination.
6. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.

C. Install single-wythe CMU flashing system in bed joints of CMU walls, in full bed of sealant, where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.

D. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

3.11 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
2. Limit height of vertical grout pours to not more than 60 inches (1520 mm).

3.12 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.

B. Testing Prior to Construction: One set of tests.

C. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.

3.13 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.14 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.

1. Crush masonry waste to less than 4 inches (100 mm) in each dimension.
2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Section 31 20 00 "Earthwork."
3. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04220

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. The Contractor shall construct all rough carpentry and appurtenant work, complete, in accordance with the requirements of the Contract Documents.

B. The work shall include, but not be limited to, completion of the following principal items:

1. Wood framing, blocking, furring, stripping, backing, and nailers, as shown, specified, or otherwise required for securing other work, except for such items as are specified to be furnished by other trades.

2. Plywood sheathing.

3. All rough hardware appurtenant to the work of this Section, as defined in the Paragraph in Part 2 entitled "Rough Hardware."

1.2 REFERENCE STANDARDS

Commercial Standards:

AWPA C1	AWPA Manual of Recommended Practice, Standard For Preservative Treatment by Pressure Process--All Timber Product
SPIB	Grading Rules for Southern Pine Lumber of the Southern Pine Inspection Bureau

1.3 SUBMITTALS

A. Detailed, dimensioned shop drawings shall be submitted to the Engineer for review and approval in accordance with Section 01340.
B. Shop drawing shall depict lumber quantity, lengths, cuts, connection details, manufactured fastener data sheets, and mill information.
C. Preservative treatment information for pressure treatment prior to delivery, and for field applied products. Submit full color palette for field applied preservative.

PART 2 - PRODUCTS

2.1 TREATED LUMBER

A. Grade: Each piece of treated lumber shall be no less than SPIB No. 1 Dense, and bear the stamp as such from the mill.

B. Pressure-Treated Lumber: All wood shall be pressure-treated in accordance with AWPA C1. Preservative shall conform to American Wood Preservers Assn. and American Wood Preservers Bureau Standard Specifications. Creosote shall not be used.

C. Cuts: Wherever necessary to cut, notch, dap, drill, or frame treated lumber, newly cut or bored surfaces shall be treated with 2 heavy coats of the same preservative used in the original treatment. The minimum penetration depth shall be 1/4-inch.

2.2 ROUGH HARDWARE

A. General: The term "rough hardware" shall include nails, screws, lag screws, bolts, nuts, washers, plates, metal fasteners, and framing anchors; anchor bolts which are to be embedded into concrete, concrete masonry, or brick masonry; and similar items employed in erection and construction of the rough carpentry work. Rough hardware shall be of standard manufacture, approved by a recognized agency for the intended applications and shall be provided with laboratory test results on capabilities when requested by the ENGINEER. Bolts, screws and nails shall be of proper size to hold members securely in place. Bolts, nuts, washers, screws and nails shall be galvanized.

Bolts for bolting wood blocking to concrete roof slabs and concrete block walls shall be 3/4 inch diameter and length suited to conditions. Washers and nuts shall be provided for all bolts. All bolts, washers, nuts, etc., shall be galvanized.

Common nails shall be used for nailing all joints of rough carpentry work.

2.3 FIELD APPLIED PRESERVATIVE

A. “Behr”, or equal, wood-toned waterproofing wood sealer and finish of penetrating oil formula.

PART 3 - EXECUTION

3.1. GENERAL

A. Preliminaries: Rough carpentry shall be as specified, shown, and as necessary for complete work. The Contractor shall verify drawing dimensions with actual field

conditions and shall inspect related work and adjacent surfaces, and shall report to the Engineer all conditions which could prevent proper execution of this work.

B. Work Coordination and Performance: The Contractor shall coordinate all the work and cooperate with the subcontractors and the trades doing related work. All work of construction shall be carefully planned and laid out. All work shall be performed under the direction of a capable, experienced supervisor.

C. Rough Hardware: All rough hardware not otherwise specified and which is necessary for the satisfactory execution of framing, including nails, spikes, dowels, fasteners, and similar incidentals shall be provided and installed by the Contractor. Rough hardware shall be coordinated, furnished, installed, and embedded as shown and as required for a complete work.

D. Framing: Framing members and assemblies shall be closely fitted, accurately set, and rigidly secured to required lines, levels, and arrangements shown. Framing shall be accurately and neatly cut and shall be securely nailed, screwed, or otherwise fastened in place in a workmanlike manner.

3.2 FASTENERS AND FRAMING DEVICES

A. Nailing: Where nail spacing is not otherwise regulated by the Building Code, nails shall not be driven closer together than 1/2 their length unless driven in drilled holes, nor driven closer to the edge of a member than 1/4 of their length. When necessary to prevent splitting, holes shall be drilled slightly smaller than nail diameters. The nails shall penetrate the second or farther member not less than 1/2 the nail length. Common nails shall be used unless otherwise specified or shown.

B. Bolts and Nuts: Malleable or cut-steel washers shall be provided under bolt heads and nuts except where bearing on steel plates or other steel attachments or where flat-head countersunk bolts are shown. Bolt holes shall be drilled 1/32-inch to 1/16-inch larger diameter than the bolts they are to accommodate, and shall be bored true-to-line. Members shall be clamped together and bolts shall be driven in place and nuts drawn up tightly. Bolts shall be drawn tight again immediately prior to enclosing with finish or, if left exposed, upon completion of other work. Holes at anchor bolts embedded in concrete may be 1/16-inch larger than bolt diameter.

C. Screws: Lag and wood screws shall be screwed, not driven, into place. Holes to receive lag screws shall be bored first of the same diameter and depth as shank, then continued to depth equal to length of screw with diameter equal to the base of the screw thread. Screws shall penetrate into the farther member a distance equal to a least 7 times the diameter of the screw shank. Washers shall be installed under each lag screw head bearing on wood.

D. Metal Framing Devices: Metal framing devices shall be furnished and installed where shown. Nails for the framing devices shall be as furnished or recommended by the manufacturer of the anchor device. All nails shall be driven to their full depth at all holes in anchors. Bolt and lag fasteners shall be drawn tight.

3.3 FRAMING

A. Strength Considerations: Structural wood framing members shall not be spliced between bearing points or supports. Approval shall be secured from the Engineer before cutting of any wood members that may weaken structure. Due care shall be exercised in placing framing so that structural and other important members do not require cutting for openings, pipes, vents, conduits, or ducts. Bearing surfaces on which wood structural members are to rest shall be finished to give full, true, and even support. Wedges or shims shall not be used to correct faulty work. Wood members which have been split or otherwise damaged to such an extent as to impair their strength shall be removed and replaced at no additional cost to the Owner.

B. Cutting and Notching: Only skilled workmen shall be used for all cutting and framing of wood members required to accommodate structural members, routing of piping, conduit, ducts, and the installation of mechanical, electrical, or other apparatus or equipment. Members shall not be cut, notched, nor bored more than 1/4 of their depth without adequate and approved reinforcing.

C. Blocking and Backing: All blocking and backing in walls and ceilings shall be nominal 2-inch thick material of a depth as needed and shall be accurately located around light fixtures, ceiling registers, grilles, and other required mechanical and electrical items. The blocking shall fit snugly and shall be spiked into the supporting framing members. Wood blocking (backing) to receive sheathing, siding, metal lath, and gypsum board shall be provided wherever necessary for securing the facing materials.

D. Backing for Specialties and Accessories: Backing shall be accurately located and installed for all building specialties, toilet accessories, and finish hardware items as required.

E. Concrete-Embedded Blocks: Where required and approved, nominal 2-inch thick nailing blocks (dovetail type) shall be provided in concrete to receive superimposed wood stripping, grounds, and backing. Applied grounds or stripping shall be securely nailed into wood nailing blocks, using nails of approved length.

F. Reserved.

G. Sleepers: All sleepers for mechanical equipment and curb openings shall be provided and coordinated with appropriate trades for locations and sizes. Sleepers shall be ripped to conform to roof slope if necessary.

3.4 OTHER

Do not apply waterproofing wood sealer until sufficient time has elapsed to ensure proper absorption of the product.

Apply materials according to manufacturer's instructions and recommendations. Spread or flow materials to produce a finish free from runs, sags or thin spots.

Do not apply a coat over another coat until the preceding coat has thoroughly dried. Do not apply additional coats until previous coat has been approved. Do not apply finish over surfaces containing excessive moisture.

Tint priming coats to approximate shade of finish. Use first coat lighter than second coat and third coat.

Fill nail holes and cracks in woodwork with putty or plastic wood matching woodwork after first coat. Color filler to match finish. Finish fill flush with adjoining surface.

Make edges of paint sharp, clean and straight. Prevent overlapping of colors.

END OF SECTION 06100

SECTION 06105 -MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking, cants, and nailers.
4. Wood furring and grounds.
5. Wood sleepers.
6. Plywood backing panels.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1.3 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:

1. Preservative-treated wood.
2. Fire-retardant-treated wood.
3. Power-driven fasteners.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat all miscellaneous carpentry unless otherwise indicated.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.

C. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

D. Application: Treat items indicated on Drawings, and the following:
1. Concealed blocking.
2. Plywood backing panels.

2.4 DIMENSION LUMBER FRAMING

A. Framing: No. 2 grade and the following species:
1. Southern pine; SPIB.

2.5 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.

3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any species.

C. For concealed boards, provide lumber with 19 percent maximum moisture content and the following species and grades:

1. Mixed southern pine, No. 2 grade; SPIB.

2.6 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: DOC PS 1, Exterior, C-C Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch (19-mm) nominal thickness.

2.7 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

B. Power-Driven Fasteners: NES NER-272.

C. Screws for Fastening to Metal Framing: [ASTM C 954, length as recommended by screw manufacturer for material being fastened.

2.8 MISCELLANEOUS MATERIALS

A. Flexible Flashing for use between treated wood and metal decking: Self-adhesive butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit.

B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

C. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.

E. Do not splice structural members between supports unless otherwise indicated.

F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

END OF SECTION 06105

SECTION 07190 - WATER REPELLENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This section covers the preparation, materials, services, and equipment required in conjunction with the application of a clear water repellent on all above grade, vertical, exterior exposed surfaces of masonry, concrete, brick, or stucco.

1.2 RELATED SECTIONS

A. Section 04200 – Unit Masonry.

B. Section 09900 – Painting.

1.3 SUBMITTALS

A. Submit under provisions of Section 01300 - Submittals.

B. Product Specification Data: Submit manufacturer's technical literature, specifications, and application instructions for the specified clear water repellent material.

C. Samples: Obtain liquid samples of the specified clear water repellent for sample application. Sample application is covered in section 1.4 QUALITY ASSURANCE.

D. Applicator Qualifications: Submit certification stating applicator has a minimum of three (3) years experience using the specified product. Provide a list of several most recently completed projects where the specified material was used. Include the project name, location, architect and method of application.

1.4 QUALITY ASSURANCE

A. Manufacturer: A firm with no less than ten (10) years experience in manufacturing the products specified in this section.

B. Applicator Qualification: A firm with no less than three (3) years experience in the application of the products specified in this section. In addition, applicator must state the intended use of the proper application equipment and that it has been well maintained.

C. Mock-Up:
   1. Apply water repellent per manufacturer's application instructions as directed by the Architect to substrate material that matches actual job conditions. Determine the acceptability of appearance and optimum coverage rate required for application.
   2. After sample treatment has cured in accordance with manufacturers recommendations, test to verify that substrate is coated with sufficient water repellent to effectively repel liquid water from the surface.
   3. Obtain Architect and/or Project Owner approval prior to full scale application of water repellents.

D. Pre-Application Meeting: Convene a pre-application meeting prior to the start of application of the specified material. Attendance by a representative of each of the following organizations is requested; the application firm, the architectural firm, and the water repellent manufacturer. Notify each of the attendees at least three (3) days prior to the meeting time.

1.5 PRODUCT DELIVERY

A. Material Delivery: Deliver materials to the job site in original sealed containers, clearly marked with manufacturer's name, brand name, and type of material. Verify the product matches that of the original sample applied on the mock - up wall.

B. Record Keeping: Contractor / applicator shall record product batch number or lot number for warranty purposes.

C. Storage & Protection: Store materials inside if possible, away from sparks and open flame. Store in a secure area to avoid tampering and contamination. Water based materials must be kept from freezing. Store and handle in accordance with manufactures written instructions.

1.6 PROJECT CONDITIONS

A. Surface Preparation: Surface must be free of cracks, dirt, oils, paint or other contaminants which may effect the appearance or performance of the water repellent material.

B. Environmental Requirements:
1. Air and substrate temperature must be above 45° F (7° C) or below 95° F (35° C) unless otherwise specified by manufacturer.
2. Do not proceed with application if the substrate is wet or contains frozen water.
3. Do not apply material when rain is predicted within 48 hours; or earlier that five (5) days after the substrate became wet.
4. Do not apply materials in high or gusty winds.

C Protection:
1. Special precautions should be taken to avoid vapor transmission (fumes) from entering the building being treated. Ventilation systems and fresh air intakes should be turned off and closed.
2. Protect shrubs, metal, wood trim, glass, asphalt and other building hardware during application from over-spray.
3. Do not permit spray mist or liquid to drift onto surrounding properties, vehicles, etc. Contractor shall be responsible for cleaning and/or repairing any adjoining properties and/or vehicles affected by overspray of products.

1.7 SCHEDULING

A. Architect shall be notified not less that 48 hours before each application of water repellent is scheduled.

1.8 PERFORMANCE REQUIREMENTS

A. Provide water repellents with the following properties based on testing manufacturer's standard products, according to test methods indicated, applied to substrates simulating Project conditions using same materials and application methods to be used for Project.

1. Water-Vapor Transmission: Maximum 8 percent reduction in rate of vapor transmission in comparison of treated and untreated specimens, per ASTM E-96.
2. Water Penetration and Leakage through masonry: Minimum 90 percent reduction in leakage rate in comparison of treated and untreated specimens, per ASTM E-514.
3. Durability Maximum 5 percent loss of water repellency after 2500 hours of weathering in comparison to specimens before weathering, per ASTM G-53.

1.9 WARRANTY

A. Provide manufacturer's standard 10 year warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Chemprobe Coating Systems, L.P.
Distributed by Technical Coatings Service 504 466-4564

B. Hydro-Stop, Inc., Charleston, South Carolina 800-739-5566

C. Prior Approved Equal

2.2 WATER REPELLENT

A. GENERAL: All products shall be solvent based, less than 600 grams per liter VOC, and a blend of silane and siloxane. No fillers, sterates, or paraffins. Products shall be a minimum of 42 percent solids.
1. Chemprobe Coating Systems "PRIME A PELL PLUS": Solvent based 42% solids silane - siloxane blend, coupled with diffused quartz carbide and silane.
2. Hydro-Stop, Inc. "CLEARGUARD PLUS"

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify the following:
1. The required joint sealants have been installed.
2. New masonry and mortar has cured a minimum of twenty-eight (28) days.
3. Surface to be treated is clean, dry and contains no frozen water.
4. Environmental conditions are appropriate for application.

3.2 PREPARATION

A. Protection:
1. Special precautions should be taken to avoid vapor transmission (fumes) from entering the building being treated. Ventilation systems and fresh air intakes should be turned off and closed.
2. Protect shrubs, metal, wood trim, glass, asphalt and other building hardware during application from over-spray.
3. Do not permit spray mist or liquid to drift onto surrounding properties or parking lots.

B. Other:
   1. Verify lawn sprinklers are turned off, where applicable, so as to avoid water contact prior to cure times required by the manufacturer.

3.3 APPLICATION

A. Apply specified water repellent in accordance with manufacturer's written application instructions.

B. Material must be applied using solvent resistant, low-pressure application equipment designed for water repellent application.

C. Apply material as shipped by the manufacturer. Do not dilute or thin.

D. Apply a saturating application of the product working from the bottom up. On porous substrates such as concrete masonry units, allow a slight rundown (less than three inches). On high density materials such as pre-cast concrete panels or GFRC, do not allow any run-down. On all substrates allow the product to penetrate the substrate for approximately 5 - 7 minutes, then apply again in the same manner. This second pass will require less material.

3.4 FIELD QUALITY CONTROL

A. The architect shall be contacted 48 hours prior to application so as to provide supervision as required. The architect or the architect's representative shall inspect the progress as the work proceeds. Do not apply any water repellent that is not specified by the architect.

B. After water repellent has cured for six (6) days at low humidity and temperature between 70°-90° F or eight (8) days at high humidity and low temperature between 50°-69° F, all surfaces shall be tested with a light water spray. Recoat any area that indicates water absorption after the water test has completely dried.

3.5 CLEANING

A. Remove protective coverings from adjacent surfaces and other protected areas.

B. Immediately clean water repellent coating from adjoining surfaces and surfaces soiled by water-repellent application as work progresses.

C. At completion, remove from the job site, all excess material, debris, and waste resulting from this work. Dispose of water repellent containers according to state and local environmental regulations.

END OF SECTION 07190

SECTION 07210 - BUILDING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass-fiber blanket insulation.
2. Vapor retarders.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product test reports.

C. Research/evaluation reports.

PART 2 – PRODUCTS

2.1 GLASS-FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
3. Johns Manville.
4. Knauf Insulation.
5. Owens Corning.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.2 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Glass-Fiber or Mineral-Wool Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch (76-mm) clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
4. For metal-framed wall cavities where cavity heights exceed 96 inches (2438 mm), support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.

C. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:

1. Spray Polyurethane Insulation: Apply according to the manufacturer's written instructions.

END OF SECTION 07210

SECTION 07410 - METAL ROOF

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preformed, prefinished metal roofing and flashings.
B. Miscellaneous trim, flashing, closures, drip flashing, and accessories.
C. Fastening devices.

1.2 RELATED SECTIONS

A. Section 05120: Structural Steel Framing.
B. Section 05500: Miscellaneous Metal Fabrication.
C. Section 06100: Rough Carpentry.
D. Section 07631: Flashing and Sheet Metal Gutters.

1.3 REFERENCES

A. American Iron & Steel Institute (AISI) Specification for the Design of Cold formed Steel Structural Members.
B. ASTM 792-86 AZ-50 Aluminum Zinc Alloy Coated Steel (Galvalume Sheet Metal)
C. ASTM E-283-84
D. ASTM E-331-86
E. Spec Data Sheet - Aluminum Zinc Alloy Coated Steel (Galvalume) Sheet Metal by Bethlehem Corp.
F. SMACNA - Architectural Sheet Metal Manual.
G. Building Materials Directory - Underwriter's Laboratories, Test Procedure 580 - UL-90.

1.4 ASSEMBLY DESCRIPTION

A. The roofing assembly includes preformed sheet metal panels, related accessories, valleys, hips, ridges, eaves, corners, rakes, miscellaneous flashing and attaching devices.

1.5 SUBMITTALS

A. Submit detailed shop drawings showing layout of panels, anchoring details, joint details, trim, flashing, and accessories.
B. Submit a sample of each type of panel, complete with factory finish.
C. Submit calculations with registered engineer seal, verifying roof panel and attachment method resist wind pressures imposed on it pursuant to applicable building codes.

1.6 QUALITY ASSURANCE

A. Manufacturer: Company specializing in Architectural Sheet Metal Products with ten (10) years minimum experience.
B. No product substitutions shall be permitted without meeting specifications.
C. Substitutions shall be submitted 10 days prior to bid date and acceptance put forth in an addendum.
D. No substitutions shall be made after the bid date.

1.7 DELIVERY, STORAGE AND HANDLING

A. Upon receipt of panels and other materials, installer shall examine the shipment for damage and completeness.
B. Panels should be stored in a clean, dry place. One end should be elevated allowing moisture to run off.
C. Panels with strippable film must not be stored in the open, exposed to the sun.
D. Stack all materials to prevent damage and to allow adequate ventilation.

1.8 WARRANTY

A. Paint finish shall have a twenty-year warranty against cracking, peeling and fading (not to exceed 5 N.B.S. units).
B. Galvalume material shall have a twenty-year warranty against failure due to corrosion, rupture or perforation.

PART 2 PRODUCT

2.1 ACCEPTABLE MANUFACTURERS

A. Berridge Manufacturing Company, San Antonio, Texas.
B. Substitutions shall fully comply with specified requirements.

2.2 SHEET MATERIALS

A. Prefinished metal shall be Aluminum-Zinc Alloy Coated (AZ-50 Galvalume®) Steel Sheet, 24-Gauge or 22-Gauge*, ASTM 792-08, Grade 40, yield strength 40 ksi min.
B. Finish shall be full strength Kynar 500® or Hylar 5000™ fluoropolymer coating applied by the manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil over 0.20 ± 0.05 mil prime coat, to provide a total top side dry film thickness of 0.95 ± 0.10 mil. Bottom side shall be coated with a primer (non-metallics only) and beige urethane coating with a total dry film thickness of 0.35 ± 0.05 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by the Kynar 500® or Hylar 5000™ finish supplier.
C. Strippable film shall be applied to the top side of all prefinished metal to protect the finish during fabrication, shipping and field handling. This strippable film MUST be removed immediately before installation.
D. Unpainted metal shall be Aluminum-Zinc Alloy Coated (AZ-55 Acrylic Coated Galvalume®) Steel Sheet, 24-Gauge or 22-Gauge*, ASTM 792-08, Grade 40, yield strength 40 ksi min., with clear acrylic coating on both sides of material.
E. Field protection must be provided by the contractor at the job site so stacked or coiled material is not exposed to weather and moisture.
F. Flashing maybe factory fabricated or field fabricated. Unless otherwise specified all exposed adjacent flashing shall be of the same material and finish as panel system.

2.3 ACCESSORY MATERIALS

A. Fasteners: Stainless Steel with washers at exposed fasteners where approved by architect.
B. Sealant: Sealant shall be an ultra low modulus, high performance, one-part, moisture curing silicone joint sealant. Tremco Spectrum One.

C. Sealant must be resistant to environmental conditions such as wind loading, wind driven rain, snow, sleet, acid rain, ozone, ultraviolet light and extreme temperature variations.
D. Features must include joint movement capabilities of +100% & -50% ASTM C-719, capable of taking expansion, compression, transverse and longitudinal movement, service temperature range -65ºF to 300ºF (-54ºC to 149ºC), Flow, sag or slump: ASTM C-639; Nil, Hardness (Shore A): ASTM C-661; 15, Tensile strength at maximum elongation: ASTM D- 412; 200 psi, Tensile strength at 100% elongation: ASTM D-412; 35 psi, Tear strength, (die "C"); ASTM D-624; 40 pli, Peel strength (Aluminum, Glass, Concrete): ASTM C-794; 30 pli
E. Vinyl Weatherseal Insert.

2.4 FABRICATION

A. All exposed adjacent flashing shall be of the same material and finish as the roof panels.
B. Hem all exposed edges of flashing on underside, ½ inch.

PART 3 EXECUTION

3.1 INSPECTION

A. Substrate

1. Examine plywood or metal deck to ensure proper attachment to framing.
2. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
3. Verify deck is dry and free of snow or ice.

B. Underlayment:

1. Verify [#30 unperforated asphalt saturated roofing felt underlayment has been installed over solid plywood or OSB sheathing and fastened in place] or [ice & water shield membrane on metal deck].
2. One (1) layer of #30 asphalt roofing felt paper for roof slopes of 3:12 and up, two (2) layers for roof slopes of 1:12 - 3:12 in moderate climates (check with Berridge).
3. Ice & Water Shield underlayment to be used on all curved applications and on low (less than 1:12) slope or complex roofs per Berridge recommendation.
4. Underlayment materials approved by Berridge for a watertightness warranty include - Grace Ice & Water Shield (40 mil), Grace Ultra (30 mil), Tamko TW Underlayment (40 mil), Tamko TW Metal & Tile (75 mil), Carlisle WIP 300 HT (40 mil), Soprema Lastobond Shield HT (40 mil), Polyglass Polystick MTS (60 mil), and Mid-States Asphalt Quik-Stick HT Pro (60 mil) *PLEASE NOTE, NO OTHER MID-STATES ASPHALT PRODUCTS WITH SIMILAR NAMES OR OTHERWISE ARE APPROVED FOR THE BERRIDGE WATERTIGHTNESS WARRANTY PROGRAM
5. Ensure felt installed horizontally, starting at eave to ridge with a 6" minimum overlap and 18" endlaps.
6. Ensure that all nail heads and felt caps are totally flush with the substrate. Fasteners shall be galvanized roofing nails or zinc-coated fasteners with Berridge Coated Felt Caps.

3.2 INSTALLATION

A. Comply with manufacturers standard instructions and conform to standards set forth in the Architectural Sheet Metal Manual published by SMACNA, in order to achieve a watertight

installation.

B. Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb.
C. Install starter and edge trim before installing roof panels.
D. Remove protective strippable film prior to installation of roof panels.
E. Attach panels using manufacturer's standard clips and fasteners, spaced in accordance with approved shop drawings.
F. Install sealants for preformed roofing panels as approved on shop drawings.
G. Do not allow panels or trim to come into contact with dissimilar materials.
H. Do not allow traffic on completed roof. If required, provide cushioned walk boards.
I. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.
J. Remove and replace any panels or components which are damaged beyond successful repair.

3.3 CLEANING

A. Clean any grease, finger marks or stains from the panels per manufacturer's recommendations.
B. Remove all scrap and construction debris from the site.

3.4 FINAL INSPECTION

A. Final inspection will be performed by a firm appointed and paid for by the owner in accordance with section 01410.

END OF SECTION 07410

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Silicone joint sealants.
   2. Latex joint sealants.

1.2 PRECONSTRUCTION TESTING

A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples: For each kind and color of joint sealant required.

C. Joint-Sealant Schedule: Include the following information:
   1. Joint-sealant application, joint location, and designation.
   2. Joint-sealant manufacturer and product name.
   3. Joint-sealant formulation.
   4. Joint-sealant color.

D. Product test reports.

E. Preconstruction field-adhesion test reports.

F. Field-adhesion test reports.

G. Warranties.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

1.5 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
   1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

B. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

2.2 SILICONE JOINT SEALANTS

A. Mildew-Resistant Silicone Joint Sealant: ASTM C 920.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. BASF Building Systems.
      b. Dow Corning Corporation.
      c. GE Advanced Materials - Silicones.
      d. Pecora Corporation.
      e. Sika Corporation; Construction Products Division.
      f. Tremco Incorporated.
   2. Type: Single component (S).
   3. Grade: nonsag (NS).
   4. 4. Class: 100/50.
   5. Uses Related to Exposure: Nontraffic (NT).

2.3 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. BASF Building Systems.
      b. Bostik, Inc.
      c. May National Associates, Inc.
      d. Pecora Corporation.
      e. Tremco Incorporated.

2.4 JOINT SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface

skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
   1. Remove laitance and form-release agents from concrete.
   2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint- sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

C. Install bond-breaker tape behind sealants where sealant backings are not used between

sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
   1. Remove excess sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
   3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
   1. Extent of Testing: Test completed and cured sealant joints as follows:
      a. Perform 10 tests for the first 1000 feet (300 m) of joint length for each kind of sealant and joint substrate.
      b. Perform 1 test for each 1000 feet (300 m) of joint length thereafter or 1 test per each floor per elevation.
   2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.4 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
   1. Joint Locations:
      a. Control and expansion joints in unit masonry.
      b. Joints in dimension stone cladding.
      c. Joints between metal panels.
      d. Joints between different materials listed above.
      e. Perimeter joints between materials listed above and frames of doors, windows, and, louvers.
      f. Control and expansion joints in ceilings and other overhead surfaces.

g. Other joints as indicated.

2. Joint Sealant: Silicone.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors. Note that custom colors may be required, at no additional cost, to match adjacent materials.

B. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.
1. Joint Locations:
   a. Control and expansion joints in tile flooring.
   b. Other joints as indicated.
2. Joint Sealant: Silicone.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors. Note that custom colors may be required, at no additional cost, to match adjacent materials.

C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
   a. Control and expansion joints on exposed interior surfaces of exterior walls.
   b. Perimeter joints of exterior openings where indicated.
   c. Tile control and expansion joints.
   d. Vertical joints on exposed surfaces of walls and partitions.
   e. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
   f. Other joints as indicated.
2. Joint Sealant: Latex.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Sealant Location:
   a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
   b. Tile control and expansion joints in food service areas and where indicated.
   c. Other joints as indicated.
2. Joint Sealant: Silicone.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors. Note that custom colors may be required, at no additional cost, to match adjacent materials.

END OF SECTION 07920

SECTION 08110 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes hollow-metal work.

1.2 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.3 REFERENCES

A. Steel Doors and Frames in this section must meet all standards as established by the following listing.
   1. Door and Hardware Preparation ANSI 115.
   2. Life Safety Codes NFPA-101 (Latest edition).
   3. Fire Doors and Windows NFPA-80 (Latest edition).
   4. Steel Door Institute ANSI/SDI-100 (Latest edition)
   5. Underwriters Laboratories UL10B fire testing.
   6. FEMA 361 Design and Construction Guidance for Community Shelters

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of exposed finish required.

E. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A. Product test reports.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Doors and frames must be properly marked with door opening mark number to correspond with the schedule.

B. Deliver all steel doors with corrugated edge protection and palletized to provide protection during transit and job storage.

C. Inspect doors and frames upon delivery for damage. Minor damage is to be repaired, provided the repair is equal to new work and acceptable to the architect.

D. Store doors and frames at the job site under cover. Place units on wood sills on the floor in a manner that will prevent rust and damage. Avoid the use of non-vented plastic or canvas shelters, which could create a humidity chamber. If the wrapper on the door becomes wet, remove the carton immediately. Provide a ¼ inch space between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:

1. Amweld International, LLC.
2. Ceco Door Products; an Assa Abloy Group company.
3. Curries Company
4. Fleming Steel Doors and Frames
5. Equal products of other manufacturers when approved by Architect prior to bidding.

2.2 REGULATORY REQUIREMENTS

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings[and temperature- rise limits] indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

B. Fire-Rated, Borrowed-Light Assemblies: Complying with NFPA 80 and listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.

2.3 INTERIOR DOORS AND FRAMES

A. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.
1. Physical Performance: Level B according to SDI A250.4.
2. Doors:
a. Type: As indicated in the Door and Frame Schedule.
b. Thickness: 1-3/4 inches (44.5 mm).
c. Face: Metallic-coated, cold-rolled steel sheet, minimum thickness of 18 gauge.
d. Edge Construction: Model 1, Full Flush.
e. Core: Manufacturer's standard.
3. Frames:
a. Materials: Metallic-coated, steel sheet, minimum thickness of 16 gauge for interior frames less than 5’-0” wide; 14 gauge for interior frames 5’-0” and wider.
b. Construction: Full profile welded.
4. Exposed Finish: Prime.

2.4 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

A. Maximum-Duty Doors and Frames: SDI A250.8, Level 4.
   1. Shelter entry doors and their frames shall resist the design wind pressures for components and cladding as described in section 1 and the missile impact loads of section 2 of the National Performance Criteria for Tornado Shelters Federal Emergency Management Agency Mitigation Directorate, latest edition. Only single opening and paired opening doors, and their frames, that can resist calculated design wind pressures and laboratory tested missile impacts are acceptable.
   2. All doors shall have sufficient points of connection to their frame to resist design wind pressure and impact loads. *Unless specifically designed for, each door shall be attached to their frame with a minimum six points of connection.*
   3. Physical Performance: Level A according to SDI A250.4.
      a. Door systems, both single doors and paired openings, shall be tested and must comply with the FEMA 361 Design and Construction Guidance for Community Shelters and have available verifiable third party conformance test results.
   4. Doors:
      a. Type: As indicated in the Door and Frame Schedule.
      b. Thickness: 1-3/4 inches (44.5 mm).
      c. Face: Metallic-coated steel sheet, minimum thickness of 14 gauge, with minimum A40 (ZF120) coating.
      d. Edge Construction: Vertical edges will join the face sheets by a continuous weld extending the full height of the door. Welds are to be ground and filled to make them invisible and provide a smooth flush surface. Reinforce tops and bottoms of all doors with an inverted continuous steel channel not less than 16 gage, extending the full width of the door and welded to the face sheet. Doors shall have a steel closure channel welded in place so the web of the channel is flush with the top of the face sheets of the door. Plastic fillers are NOT acceptable.
      e. Hinge reinforcement to be not less than 7 gage (3/16") plate 1-1/4" X 9" prepared for 4-1/2 x 4-1/2 x .180 hinges.
      f. Core: Polyurethane, 2.0 density.
   5. Thermal-Rated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than [2.1 deg F x h x sq. ft./Btu (0.370 K x sq. m/W)] <Insert R-value> when tested according to ASTM C 1363.
   6. Frames:
      a. Frame assembly for both single doors and paired openings, shall be tested and must comply with the FEMA 361 Design and Construction Guidance for Community Shelters and have available verifiable third party conformance test results.
      b. Materials: Metallic-coated steel sheet, minimum thickness of 12 gauge, with minimum A40 (ZF120) coating.
      c. Construction: Full profile welded.
      d. Hinge reinforcement to be not less than 7 gage (3/16") plate prepared for 4-1/2 x 4- 1/2 x .180 hinges.
   7. Exposed Finish: Prime.

2.5 FRAME ANCHORS

A. Jamb Anchors:
   1. Masonry Type: T-shaped anchors to suit frame size, not less than 0.042 inch (1.0 mm) thick, with corrugated or perforated straps not less than 2 inches (51 mm)

wide by 10 inches (254 mm) long; or wire anchors not less than 0.177 inch (4.5 mm) thick. Quantity of anchors installed as required for system performance.

2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch (1.0 mm) thick.

B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch (1.0 mm), and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.6 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.

G. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.

H. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing).

I. Glazing: Section 08800 "Glazing."

J. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil (0.4-mm) dry film thickness per coat.

2.7 FABRICATION

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Doors:

1. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.

2. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated.

C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
   1. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
   2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
   3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
   4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
   5. Jamb Anchors: Provide number and spacing of anchors as follows:
      a. Masonry Type: Locate anchors not more than 16 inches (406 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c., to match coursing, and as follows:
         1) Two anchors per jamb up to 60 inches (1524 mm) high.
         2) Four anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
         3) Four anchors per jamb from 90 to 120 inches (2286 to 3048 mm) high.
         4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 120 inches (3048 mm) high.
      b. Stud-Wall Type: Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:
         1) Three anchors per jamb up to 60 inches (1524 mm) high.
         2) Four anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
         3) Five anchors per jamb from 90 to 96 inches (2286 to 2438 mm) high.
         4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 96 inches (2438 mm) high.
   6. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers.
      a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
      b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
   1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware. Hardware reinforcements are to be in accordance with the minimum standard gages as listed in SDI-100.
   2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

E. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
   1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow- metal work.
   2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
   3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.

4. Provide loose stops and moldings on inside of hollow-metal work.
5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.8 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply the manufacturer's standard primer.
   1. Shop Primer: SDI A250.10.

2.9 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from the same material as frames, not less than 0.016 inch (0.4 mm) thick.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
   1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
      a. At fire-rated openings, install frames according to NFPA 80.
      b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
      c. Install frames with removable stops located on secure side of opening.
      d. Install door silencers in frames before grouting.
      e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
      f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
      g. Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.
   2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
      a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
   3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
   4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
   5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
   6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
   7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.

8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
    a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
    c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

B. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
    1. Non-Fire-Rated Steel Doors:
        a. Between Door and Frame Jambs and Head: 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm).
        b. Between Edges of Pairs of Doors: minus 1/32 inch (0.8 mm). 1/8 inch (mm) to 1/4 inch (6.3 mm) plus or minus 1/32 inch (0.8 mm).
        c. At Bottom of Door: [3/4 inch (19.1 mm)] [5/8 inch (15.8 mm)] plus or minus 1/32 inch (0.8 mm).
        d. Between Door Face and Stop: 1/16 inch (1.6 mm) to 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm).

C. Glazing: Comply with installation requirements in Section 08800 "Glazing" and with hollow- metal manufacturer's written instructions.
    1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches (230 mm) o.c. and not more than 2 inches (51 mm) o.c. from each corner.

3.2 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

E. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 08110

SECTION 08710 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Mechanical heavy-duty door hardware for the following:

a. Swinging doors.

1.3 PERFORMANCE REQUIREMENTS

A. General: Heavy-duty rated hardware.

B. Structural Loads: Provide door hardware that when installed in exterior door systems is capable of withstanding the wind load design pressure for the following wind force:

1. Wind Loads: As indicated on Drawings.

C. Windborne-Debris-Impact-Resistance Performance: Provide door hardware that when installed in door assembly systems pass missile-impact and cyclic-pressure tests when tested according to ASTM E 1886 and testing information in ASTM E 1996.

1. Large-Missile Impact: For metal-framed systems located within 30 feet (9.1 m) of grade.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Initial Submittal: Prior to submitting schedules and shop drawings, provide documentation that lockset, cylinder, and keyway materials to be supplied are fully compatible with Owner’s existing grand master key system.

C. Other Action Submittals:

1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with

doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

a. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
b. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
c. Content: Include the following information:

1) Identification number, location, hand, fire rating, size, and material of each door and frame.
2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
4) Description of electrified door hardware sequences of operation and interfaces with other building control systems.
5) Fastenings and other pertinent information.
6) Explanation of abbreviations, symbols, and codes contained in schedule.
7) Mounting locations for door hardware.
8) List of related door devices specified in other Sections for each door and frame.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and Architectural Hardware Consultant.

B. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.

C. Warranty: Special warranty specified in this Section.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.

B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as follows:

1. For door hardware, an Architectural Hardware Consultant (AHC).

C. Source Limitations: Obtain each type of door hardware from a single manufacturer.

D. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.

E. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

F. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
2. Comply with the following maximum opening-force requirements:

    a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
    b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

G. Preinstallation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Inspect and discuss preparatory work performed by other trades.
3. Inspect and discuss electrical roughing-in for electrified door hardware.
4. Review sequence of operation for each type of electrified door hardware.
5. Review required testing, inspecting, and certifying procedures.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with the

final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

D. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.10 COORDINATION

A. Coordinate lockset type and keyway with Owner and Architect prior to submitting hardware submittals for review. It is the intent for all keyways to match the Owner's existing grand master system.

B. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

C. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

D. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

1.11 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including excessive deflection, cracking, or breakage.
b. Faulty operation of doors and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Three years from date of Substantial Completion, unless otherwise indicated.

a. Mortise Locks: Seven years from date of Substantial Completion.
b. Exit Devices: Five years from date of Substantial Completion.
c. Manual Closers: 10 years from date of Substantial Completion.

1.12 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section.

1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.
2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by using door hardware designations, as follows:

1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Schedule" Article.
2. References to BHMA Designations: Provide products complying with these designations and requirements for description, quality, and function.

2.2 HINGES

A. Hinges: BHMA A156.1.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

a. Hager Companies.
b. McKinney Products Company; an ASSA ABLOY Group company.
c. Stanley Commercial Hardware; Div. of The Stanley Works.

B. Hinge Options: Comply with the following where indicated in the Door Hardware Schedule or on Drawings:

1. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the following applications:

a. Out-swinging exterior doors.
b. Out-swinging access controlled doors.

2. Hinge Material: Heavy-duty stainless steel. Non-rusting type for exterior and high-humidity conditions.

2.3 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: As indicated in door hardware schedule.

B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:

1. Mortise Locks: Minimum 3/4-inch (19-mm) latch bolt throw.
2. Deadbolts: Minimum 1-inch (25-mm) bolt throw.

C. Lock Backset: 2-3/4 inches (70 mm), unless otherwise indicated.

D. Lock Trim:

1. Basis of Design Description: Corbin Russwin ML2000 Series, Heavy-Duty, Grade 1.
2. Levers: Cast.

a. Newport Lever Design; NSM Escutcheon and NSA Rose.

3. Escutcheons (Roses): Wrought.

E. Strikes: Provide manufacturer's standard strike for each lock bolt or latch bolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks with three-piece antifriction latch bolts, as recommended by manufacturer.

F. Mortise Locks: BHMA A156.13; Security Grade 1; stamped steel case with steel or brass parts; Series 1000.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

a. Corbin Russwin Hardware – ML 2000 Series.
b. Sargent Manufacturing Company; an ASSA ABLOY Group company; 8200 Series.
c. Schlage Commercial Lock Division; an Ingersoll-Rand company; L9000 Series.
d. Yale Security Inc.; an ASSA ABLOY Group company; 8800FL Series.

2. Provide locks with stainless steel latch bolts and stainless steel deadbolts.
3. Provide locks which are field reversible without opening the lock case.

2.4 AUXILIARY LOCKS

A. Mortise Auxiliary Locks: BHMA A156.5; Grade 2; with strike that suits frame.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

a. Same manufacturer as the locks.

2.5 EXIT DEVICES AND AUXILIARY ITEMS

A. Exit Devices and Auxiliary Items: BHMA A156.3.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

    a. Corbin Russwin Hardware; ED5000 Series with Securebolt.
    b. Von Duprin; an Ingersoll-Rand company; XP99 Series.
    c. Yale Security Inc.; an ASSA ABLOY Group company; 7000 Series with Squarebolt.

2.6 LOCK CYLINDERS

A. General Requirements:

1. All door lock cylinders shall be compatible with the Owner's existing grand master key and core system with interchangeable cores and shall be factory-maintained geographically-restricted keyway restricted to within 100 mile radius area of end user. Coordinate with Owner and Architect prior to submittals.
2. The Contractor shall be responsible to provide interchangeable cores for all devices using an Allowance of $27.00 per interchangeable cylinder for cores and keys. The Contractor shall include the allowance cost in its bid.
3. The Owner will provide the Contractor with a key schedule.

B. Lock Cylinders: Tumbler type for interchangeable core, constructed from brass or bronze, stainless steel, or nickel silver.

1. Manufacturer: Best Stanley.
2. Design Requirement: The cylinder may not project from the escutcheon more than the lockset manufacturer's standard dimension.

C. Interchangeable Cores:

1. Manufacturer: Same as cylinder.
2. Key Registration List: Provide keying transcript list to Owner's representative for lock cylinders.

D. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide construction master keys and construction control keys as required by General Contractor.

2.7 KEYING

A. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

    a. Notation: "DO NOT DUPLICATE."

2. Quantity: In addition to one extra key blank for each lock, provide the following:

a. Cylinder Change Keys: Three per cylinder.
b. Master Keys: five per section.
c. Control Keys: Two.
d. Construction Control Keys: Two.
e. Extra Keyed Permanent Cores: Ten.
f. Extra Blank Keys: Ten.

2.8 OPERATING TRIM

A. Operating Trim: BHMA A156.6; stainless steel, unless otherwise indicated.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

a. McKinney Products.
b. Hager Companies.
c. Rockwood Manufacturing Company.
d. Trimco.

2.9 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; heavy-duty, rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force. All closers to be handicapped accessible type.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

a. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
b. LCN Closers; an Ingersoll-Rand company.
c. Norton Door Controls; an ASSA ABLOY Group company.
d. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
e. Yale Security Inc.; an ASSA ABLOY Group company.

2.10 MECHANICAL STOPS AND HOLDERS

A. Wall- and Floor-Mounted Stops: BHMA A156.16; polished cast brass, bronze, or aluminum base metal.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

a. McKinney Products.
b. Hager Companies.
c. Rockwood Manufacturing Company.
d. Trimco.

B. Silencers for Metal Door Frames: BHMA Grade 1; neoprene or rubber, minimum diameter ½ inch fabricated for drilled-in application to frame. Provide three per single door and two per frame for paired doors if applied gasketing is not specified in Hardware Sets.

2.11 DOOR GASKETING

A. Door Gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot (0.000774 cu. m/s per m) of crack length for gasketing other than for smoke control, as tested according to ASTM E 283; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

    a. McKinney Weatherstripping Products.
    b. Hagar Companies.
    c. NGP Manufacturing.
    d. Pemko Manufacturing Co.; an ASSA ABLOY Group company.

2.12 THRESHOLDS

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

    a. McKinney Weatherstripping Products.
    b. Hagar Companies.
    c. NGP Manufacturing.
    d. Pemko Manufacturing Co.; an ASSA ABLOY Group company.

2.13 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.

1. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

    a. McKinney Weatherstripping Products.
    b. Hagar Companies.
    c. Rockwood Manufacturing.
    d. Trimco Manufacturing.

2.14 AUXILIARY DOOR HARDWARE

A. Auxiliary Hardware: BHMA A156.16.

B. Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

1. Baldwin Hardware Corporation.
2. Cal-Royal Products, Inc.
3. Don-Jo Mfg., Inc.
4. Hager Companies.
5. Rockwood Manufacturing Company.
6. Stanley Commercial Hardware; Div. of The Stanley Works.
7. Trimco.

2.15 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire- rated labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
2. Fire-Rated Applications:

a. Wood or Machine Screws: For the following:

1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
2) Strike plates to frames.
3) Closers to doors and frames.

b. Steel Through Bolts: For the following unless door blocking is provided:

1) Closers to doors and frames.
2) Surface-mounted exit devices.

3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
4. Fasteners for Wood Doors: Comply with requirements in DHI

WDHS.2, "Recommended Fasteners for Wood Doors."

5. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.16 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable.

Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing. Do not install surface- mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Lock Cylinders: Install construction cores to secure building and areas during construction period.
1. Replace construction cores with permanent cores as directed by Owner.

E. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 07 92 00 "Joint Sealants."

F. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

G. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

H. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Independent Architectural Hardware Consultant: Owner may engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Section 01 79 00 "Demonstration and Training."

3.8 DOOR HARDWARE SCHEDULE

Hardware Schedule

Set: 1.0

Description: Exterior Concession

3 Hinges	T4A3386 4-1/2” x 4-1/2” NRP	US32D	McKinney
1 Entry Lock w/ Deadbolt	ML2065 NSA	630	Corbin Russwin
1 Mortise Cylinder	1E-74	626	Best
1 Closer w/ Stop/Hold Arm	DC6210 A5	689	Corbin Russwin
1 Kickplate	K1050 10” x 2” LDW 4BE CSK	US32D	Rockwood
1 Threshold	2005AT		Pemko
1 Perimeter Seal	2891APK		Pemko
1 Rain Guard	346C		Pemko
1 Sweep	3452AV		Pemko
1 Viewer	622	CRM	Rockwood

Set: 2.0

Description: Concession Storeroom

3 Hinge	TA2314 4-1/2" x 4-1/2"	US32D	McKinney
1 Storeroom Lock	ML2057 NSA	630	Corbin Russwin
1 Mortise Cylinder	1E-74	626	Best
1 Surface Overhead Stop	9-X36	630	Rixson
3 Silencers	608		Rockwood

Set: 3.0

Description: Coiling Doors for Concession Stand and Storage Room

1 Mortise Cylinder	1E-74	626	Best

Notes: Balance of hardware by door manufacturer. Verify cylinder type and cam required.

END OF SECTION 08710

SECTION 08900 - LOUVERS AND VENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Fixed, extruded-aluminum louvers.

B. Related Sections:

1. Division 4 Section 04220 “Concrete Unit Masonry” for flood vents in CMU walls.
2. Division 15 Sections for louvers that are a part of mechanical equipment.

1.3 DEFINITIONS

A. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.

B. Horizontal Louver: Louver with horizontal blades; i.e., the axes of the blades are horizontal.

C. Storm-Resistant Louver: Louver that provides specified wind-driven rain performance, as determined by testing according to AMCA 500-L.

1.4 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design louvers, including comprehensive engineering analysis by a qualified professional engineer, using structural performance requirements and design criteria indicated.

B. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act normal to the face of the building.

1. Wind Loads: Determine loads based on pressures as indicated on Drawings.

C. Thermal Movements: Allow for thermal movements from ambient and surface

temperature changes, without buckling, opening of joints, overstressing of components, failure of connections, or other detrimental effects.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

D. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

1. Show weep paths, gaskets, flashing, sealant, and other means of preventing water intrusion.
2. Show mullion profiles and locations.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of metal finish required.

E. Delegated-Design Submittal: For louvers indicated to comply with structural performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

F. Product Test Reports: Based on evaluation of comprehensive tests performed according to AMCA 500-L by a qualified testing agency or by manufacturer and witnessed by a qualified testing agency, for each type of louver and showing compliance with performance requirements specified.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain louvers and vents from single source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.

B. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

C. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T5, T-52, or T6.

B. Fasteners: Use types and sizes to suit unit installation conditions.

1. Use Phillips flat-ad hex-head or Phillips pan-head screws for exposed fasteners unless otherwise indicated.
2. For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.
3. For color-finished louvers, use fasteners with heads that match color of louvers.

C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.2 FABRICATION, GENERAL

A. Assemble louvers in factory to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Maintain equal louver blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.

C. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

1. Frame Type: Channel unless otherwise indicated.

D. Include supports, anchorages, and accessories required for complete assembly.

E. Provide subsills made of same material as louvers or extended sills for recessed louvers.

F. Join frame members to each other and to fixed louver blades with fillet welds, threaded fasteners, or both, as standard with louver manufacturer unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

2.3 FIXED, EXTRUDED-ALUMINUM LOUVERS

A. Horizontal Storm-Resistant Louver:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Air Balance Inc.; a Mestek company.
    b. Air Flow Company, Inc.
    c. Airolite Company, LLC (The).
    d. All-Lite Architectural Products.
    e. American Warming and Ventilating, Inc.; a Mestek company.
    f. Construction Specialties, Inc.
    g. Greenheck Fan Corporation.
    h. Industrial Louvers, Inc.
    i. NCA Manufacturing, Inc.
    j. Nystrom Building Products.
    k. Reliable Products, Inc.
    l. Ruskin Company; Tomkins PLC.

2. Louver Depth: 4 inches (100 mm).
3. Frame and Blade Nominal Thickness: Not less than 0.080 inch (2.03 mm).
4. Louver Performance Ratings:

    a. Free Area: Not less than 5.0 sq. ft. (0.46 sq. m) for 48-inch- (1220-mm-) wide by 48-inch- (1220-mm) high louver.
    b. Air Performance: Not more than 0.10-inch wg (25-Pa) static pressure drop at 600-fpm (3.0-m/s) free- area intake velocity.
    c. Wind-Driven Rain Performance: Not less than 99 percent effectiveness when subjected to a rainfall rate of 8 inches (200 mm) per hour and a wind speed of 50 mph (22.4 m/s) at a core-area intake velocity of 300 fpm (1.5 m/s).
    d. Self-draining type.

5. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.4 LOUVER SCREENS

A. General: Provide screen at each exterior louver.

1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Insect screening.

B. Secure screen frames to louver frames with stainless-steel machine screws, spaced a maximum of 6 inches (150 mm) from each corner and at 12 inches (300 mm) o.c.

C. Louver Screen Frames: Fabricate with mitered corners to louver sizes indicated.

1. Metal: Same kind and form of metal as indicated for louver to which screens are attached. Reinforce extruded-aluminum screen frames at corners with clips.

2. Finish: Same finish as louver frames to which louver screens are attached.
3. Type: Rewirable frames with a driven spline or insert.

D. Louver Screening for Aluminum Louvers:

1. Insect Screening: Aluminum, 18-by-16 (1.4-by-1.6-mm) mesh, 0.012-inch (0.30-mm) wire.

2.5 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.6 ALUMINUM FINISHES

A. Finish louvers after assembly.

B. High-Performance Organic Finish: 2-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Color and Gloss: Match Architect's sample.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.3 INSTALLATION

A. Locate and place louvers and vents level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.

C. Form closely fitted joints with exposed connections accurately located and secured.

D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

E. Repair finishes damaged by cutting, welding, soldering, and grinding. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.

F. Protect unpainted galvanized and nonferrous-metal surfaces that will be in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

G. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Division 07 Section "Joint Sealants" for sealants applied during louver installation.

3.4 ADJUSTING AND CLEANING

A. Clean exposed surfaces of louvers and vents that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate during construction period.

B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

C. Restore louvers and vents damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

1. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 08900

SECTION 09670 – DECORATIVE LAMINATE EPOXY FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Decorative quartz-filled polyamine epoxy flooring system.
2. Integral cove base.

B. Related Section:

1. Division 07 Section "Joint Sealants" for sealants installed with epoxy flooring system.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Include installation requirements. Include plans, elevations, sections, component details, and attachments to other work. Show layout of the following:

1. Color samples.

C. Samples for Initial Selection: Color samples showing the colors selected.

1. Resinous Flooring: 6-inch- (150-mm-) square Samples.

D. Installer Certificates: Signed by manufacturers certifying that installers comply with requirements.

E. Qualification Data: For qualified Installer.

F. Material Certificates: For each type epoxy flooring material or product, from manufacturer.

G. Maintenance Data: For epoxy flooring system to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who is acceptable to epoxy flooring manufacturer to install manufacturer's products.

1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to install manufacturer's products.

B. Source Limitations: Obtain primary epoxy flooring materials from one source from a single manufacturer. Provide secondary materials including patching and fill material, joint sealant, and repair materials of type and from source recommended by manufacturer of primary materials.

C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockups for resinous flooring.

a. Size: Minimum 100 sq. ft. (9 sq. m) of typical epoxy flooring condition for each color and pattern in locations directed by Architect.

2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Pre-installation Conference: Conduct conference at Project site.

1. Review methods and procedures related to epoxy flooring including, but not limited to, the following:

a. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
b. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
c. Review special designs and patterns.
d. Review dust-control procedures.

1.5 WARRANTY

A. Manufacturer’s 5-year warranty.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in supplier's original wrappings and containers, labeled with source's or manufacturer's name, material or product brand name, and lot number if any.

B. Store materials in their original, undamaged packages and containers, inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting epoxy flooring installation.

B. Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring installation.

C. Close spaces to traffic during epoxy flooring application and for not less than 24 hours after application unless manufacturer recommends a longer period.

PART 2 - PRODUCTS

2.1 QUARTZ-FILLED POLYAMINE EPOXY FLOORING

A. Products (EPX-1 for floor, EPXB-1 for cove base): Subject to compliance with requirements, provide product by one of the following manufacturers that meets the requirements:

1. Stonehard Stonshield QBT (basis of design)
2. Dex-O-Tex Décor-Flor
3. Dudick – Steri-Quartz T
4. Newoguard New-Quartz Epoxy Flooring
5. Tnenemec Company, Inc. Series 222 Deco-Tread.

B. Materials:

1. Stonshield QBT Base: A 3-component, troweled mortar base consisting of epoxy resin, curing agent, and color quartz aggregate.
2. Stonshield Aggregate: Brightly colored quartz broadcast aggregate.
3. Stonkote CE4: A 2-component, high performance UV resistant, clear epoxy sealer.
4. Primer: Manufacturer's product recommended for substrate and use indicated.

2.2 MISCELLANEOUS ACCESSORIES

A. Patching and Fill Material: Resinous flooring manufacturer's resinous product approved and recommended by manufacturer for application indicated.

B. Joint Compound: Epoxy flooring manufacturer's resinous product approved and recommended by manufacturer for application indicated.

C. Cleaner: Chemically neutral cleaner with pH factor between 7 and 10 that is biodegradable, phosphate free, and recommended by sealer manufacturer for use on flooring type indicated.

2.3 COLOR SELECTION

A. Stonhard Stonshield, Flagstone color, standard texture.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions, including levelness tolerances, have been corrected.

3.2 PREPARATION

A. Clean substrates of substances, including oil, grease, and curing compounds, that might impair flooring bond. Provide clean, dry, and neutral substrate for flooring application.

B. Concrete Slabs:

1. Allow concrete to cure for 28 days.
2. Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with epoxy system.

    a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
    b. Repair damaged and deteriorated concrete according to flooring manufacturer's written recommendations.
    c. Use patching and fill material to fill holes and depressions in substrates, and grind down high spots, according to flooring manufacturer's written instructions.

3. Verify that concrete substrates are visibly dry and free of moisture.
4. Moisture Testing:

    a. Test for moisture content by method recommended in writing by epoxy flooring manufacturer. Proceed with installation only after substrates pass testing.

C. Vacuum clean concrete to remove all dirt, dust and other loose materials.

D. Installation of epoxy flooring system indicates acceptance of surfaces and conditions.

3.3 EPOXY FLOORING INSTALLATION

A. General: Epoxy with multi-color broadcast granules.

1. Comply with manufacturer’s written recommendations for epoxy flooring accessory installation.

B. Thickness: 3/16 inch (4 - 5 mm) applied as a slurry broadcast and troweled.

C. Floor Leveling: Epoxy flooring finish to be level with vinyl composition tile and other new and existing adjacent flooring finishes. Level floor with Portland cement based feathering patching material and grind down high spots to provide a level/sloped surface specified for installation of flooring.

D. Floor Transition: Terminate epoxy floor finish at a tapered stainless steel transition strip at sealed concrete floors; embed the setting edge of the transition strip in the epoxy floor finish. Caulk leading edge of transition strip to concrete.

E. Primer: Apply to resinous flooring substrates according to manufacturer's written instructions.

F. Sealer: Apply 2 coats as directed by manufacturer.

G. Repair: Remove and replace epoxy flooring areas that evidence lack of bond with substrate. Repairs to blend in with adjacent areas, to the satisfaction of the Architect.

3.4 QUALITY CONTROL

A. Concrete Surface Profile: Using the replicate rubber specimens, inspect the concrete surface profile in accordance with ICRI Guide No. 03732. This should be performed once for every 100 square feet of surface area to be coated.

B. Measure and record ambient air temperature once every two hours of each shift, using a thermometer and measure and record substrate temperature once every two hours using a surface thermometer.

C. Measure and record relative humidity every two hours of each shift, using a sling psychrometer in accordance with ASTM E337.

D. Inspect correct mixing of coating materials in accordance with the CSM’s instructions.

E. Inspect and record that the “pot life” of coating materials used are not exceeded during installation.

F. Measure and record the thickness of the coating system using a notched gauge in accordance with ASTM D4414 for Wet Film Thickness at least once every 10 sq. ft. of coating area.

G. Perform moisture tests on concrete as follows:

1. Once for every 500 square feet of surface area to be coated, perform the plastic sheet test in accordance with ASTM D4263. If moisture is indicated, proceed to step 2 below.
2. Perform calcium chloride moisture tests in accordance with ASTM D1869 once for every 1000 square feet of surface area to be coated. The maximum limit for moisture vapor emissions rate should be 3.0 lbs. per 24 hours per 1000 sq. ft. If tests indicate rates higher than 3.0, consult with flooring manufacturer's technical service department for further evaluation.

H. Inspect to verify proper curing of the decorative epoxy flooring system as recommended by the CSM.

3.5 CLEANING AND PROTECTION

A. Protection: Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure that epoxy flooring is without damage or deterioration at time of Substantial Completion.

END OF SECTION 09670

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1.2 SUBMITTALS

A. Product Data: For each product indicated.

B. Samples: For each type of finish-coat material indicated.

1.3 QUALITY ASSURANCE

A. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5.
   1. Wall Surfaces: Provide samples on at least 100 sq. ft..
   2. Small Areas and Items: Architect will designate items or areas required.
   3. Final approval of colors will be from benchmark samples.

1.4 PROJECT CONDITIONS

A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain storage containers in a clean condition, free of foreign materials and residue.

B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F (10 and 32 deg C).

C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F (7 and 35 deg C).

D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

B. Acceptable Manufacturers: Products listed in this section are based on Products by Sherwin-Williams Co. In addition to Sherwin Williams, available manufacturers include, but are not limited to the following:
   1. Benjamin Moore & Co. (Benjamin Moore)
   2. Sherwin Williams.
   3. Equal products of other manufacturers when approved by the Architect prior to bidding.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: As selected from manufacturer's full range.

2.3 PREPARATORY COATS

A. Exterior Primer: Exterior latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
   1. Ferrous-Metal and Aluminum Substrates: Rust-inhibitive metal primer.
   2. Zinc-Coated Metal Substrates: Galvanized metal primer.
   3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

B. Interior Primer: Interior latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
   1. Ferrous-Metal Substrates: Quick drying, rust-inhibitive metal primer.
   2. Zinc-Coated Metal Substrates: Galvanized metal primer.
   3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

2.4 EXTERIOR FINISH COATS

A. Exterior Satin Latex:
   1. Sherwin-Williams; SuperPaint Exterior Latex Satin, A89 Series.
   2. Equal products of other prior-approved manufacturers.

2.5 INTERIOR FINISH COATS

A. Interior Low-Luster Acrylic Enamel:
   1. Sherwin-Williams; SuperPaint Interior Latex Satin, A87-100 Series.

B. Interior Semigloss Acrylic Enamel:
   1. Sherwin-Williams; SuperPaint Interior Latex Semi-Gloss, A88 Series.

2.6 INTERIOR WOOD STAINS AND VARNISHES

A. Interior Wood Stain: Alkyd based.
   1. Sherwin-Williams; Wood Classics Interior Oil Stain A-48 Series.

B. Interior Waterborne Clear Satin Varnish: Acrylic-based polyurethane.
   1. Sherwin-Williams; Wood Classics Waterborne Polyurethane Satin, A68 Series.

C. Paste Wax: As recommended by manufacturer.

PART 3 - EXECUTION

3.1 APPLICATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

C. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
   1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

D. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
   1. Provide barrier coats over incompatible primers or remove and reprime.
   2. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
      a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
      b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
      c. If transparent finish is required, backprime with spar varnish.
      d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
      e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
   3. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
      a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3.
      b. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.
   4. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

E. Material Preparation:

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

F. Exposed Surfaces: Include areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
1. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
2. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
3. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

G. Sand lightly between each succeeding enamel or varnish coat.

H. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Omit primer over metal surfaces that have been shop primed and touchup painted.
2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.

I. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.

K. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

L. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

M. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

N. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

O. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

3.2 CLEANING AND PROTECTING

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

B. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.3 EXTERIOR PAINT SCHEDULE

A. Concrete Block / CMU:
1. Acrylic Finish: Two finish coats over a block filler/surfacer/primer.
   a. Primer: Sherwin-Williams PrepRite Block Filler
   b. Finish Coats: S-W Metalatex Acrylic Semi-Gloss, B42 Series.

B. Ferrous Metal:
1. Acrylic Finish: Two finish coats over a rust-inhibitive primer.
   a. Primer: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series.
   b. Finish Coats: S-W Metalatex Acrylic Satin, B41 Series.

C. Galvanized Steel:
1. Acrylic Finish: Two finish coats.
   a. Finish Coats: S-W Metalatex Acrylic Satin, B41 Series.

3.4 INTERIOR PAINT SCHEDULE

A. Gypsum Board:
1. Acrylic Finish: Two finish coats over a primer.
   a. Primer: Sherwin-Williams PrepRite Classic Primer.
   b. Finish Coats: Sherwin-Williams SuperPaint Interior Latex Satin, A87-100 Series.

B. Concrete Block / CMU:
1. Acrylic Finish: Two finish coats over a block filler/surfacer/primer.
   a. Primer: Sherwin-Williams Loxon Block Surfacer.
   b. Finish Coats: Sherwin-Williams SuperPaint Interior Latex Satin, A87-100 Series.

C. Ferrous Metal:
1. Acrylic Finish: Two finish coats over a primer.
   a. Primer: S-W Pro Industrial Pro-Cryl® Primer, B66-310 Series.
   b. Finish Coats: S-W ProMar® 200 Latex Eg-Shel, B20W2200 Series.

D. Galvanized Metal:

1. Acrylic Finish: Two finish coats.
    a. Finish Coats: S-W ProMar® 200 Latex Eg-Shel, B20W2200 Series.

E. Interior Wood Trim:
1. Acrylic Finish: Two finish coats over a primer
    a. Primer: S-W PrepRite® ProBlock Latex. B51 Series
    b. Finish Coats: Sherwin-Williams SuperPaint Interior Latex Semi-Gloss, A88 Series.

3.5 INTERIOR STAIN AND NATURAL-FINISH WOODWORK SCHEDULE

A. Stain-Varnish Finish: Two finish coats of varnish over a sealer coat and interior wood stain.
1. Stain Coat: Interior wood stain.
2. Sealer Coat: Clear sanding sealer.
3. Finish Coats: Interior waterborne clear satin varnish.

END OF SECTION 09900

SECTION 10440 – FIRE PROTECTION CABINETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Fire-protection cabinets for the following:

a. Portable fire extinguishers.

B. Related Requirements:

1. Section 10441 "Fire Extinguishers."

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Show door hardware, cabinet type, trim style, and panel style. Include roughing-in dimensions and details showing surface-mounting method and relationships of box and trim to surrounding construction.

B. Shop Drawings: For fire-protection cabinets. Include plans, elevations, sections, details, and attachments to other work. Verify sufficient clearances for recessed units. Verify proper substrates, clearances, and coordination with other items for mounting surface-mounted units.

C. Samples for Verification: For each type of exposed finish required, prepared on Samples 150 by 150 mm (6 by 6 inches) square.

D. Product Schedule: For fire-protection cabinets. Coordinate final fire-protection cabinet schedule with fire- extinguisher schedule to ensure proper fit and function.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For fire-protection cabinets to include in maintenance manuals.

1.5 COORDINATION

A. Coordinate size of fire-protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

B. Coordinate sizes and locations of fire-protection cabinets with surrounding equipment, door swings, clearances, etc.

PART 2 - PRODUCTS

2.1 FIRE-PROTECTION CABINET

A. Cabinet Type: Suitable for hand-held fire extinguisher.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Guardian Fire Equipment, Inc.
b. JL Industries, Inc.; a division of the Activar Construction Products Group.
c. Larsens Manufacturing Company.
d. Potter Roemer LLC.

B. Cabinet Construction: Nonrated.

C. Cabinet Material: Cold-rolled steel sheet.

1. Shelf: Same metal and finish as cabinet.

D. Mountings:

1. Recessed Cabinet: Exterior rated, with breakable glass and lock for between Restroom entrances.
2. Surface-Mounted Cabinets: Cabinet box fully exposed and mounted directly on wall with no trim. For all other locations (interior rated).

E. Cabinet Trim Material: Same material and finish as door.

F. Door Material: Stainless-steel sheet.

G. Door Style: Vertical duo panel with frame.

H. Door Glazing: Tempered float glass (clear).

I. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.

1. Provide projecting door pull and friction latch.
2. Provide continuous hinge, of same material and finish as trim, permitting door to open 180 degrees.

J. Accessories:

1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire-protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
2. Door Lock: Cam lock that allows door to be opened during emergency by pulling sharply

on door handle.

3. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as follows:

    a. Identify fire extinguisher in fire-protection cabinet with the words "FIRE EXTINGUISHER."

        1) Location: Applied to cabinet door.
        2) Application Process: Silk-screened.
        3) Lettering Color: Red.
        4) Orientation: Vertical.

K. Materials:

1. Cold-Rolled Steel: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.

    a. Finish: Baked enamel or powder coat.
    b. Color: White.

2. Stainless Steel: ASTM A 666, Type 304.

    a. Finish: No. 4 directional satin finish.

3. Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, Class 1 (clear).

2.2 FABRICATION

A. Fire-Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.

1. Weld joints and grind smooth.
2. Provide factory-drilled mounting holes.
3. Prepare doors and frames to receive locks.
4. Install door locks at factory.

B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles.

1. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 13 mm (1/2 inch) thick.
2. Fabricate door frames of one-piece construction with edges flanged.
3. Miter and weld perimeter door frames.

C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.3 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's AMP 500, "Metal Finishes Manual for Architectural and Metal Products," for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces of fire-protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

C. Finish fire-protection cabinets after assembly.

D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for suitable finish, anchoring capability, and clearances.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install fire-protection cabinets in locations and at mounting heights indicated or, if not indicated, at height indicated below:

1. Fire-Protection Cabinets: 1372 mm (54 inches) above finished floor to top of cabinet.

B. Fire-Protection Cabinets: Fasten cabinets to structure, square and plumb.
1. Fasten mounting brackets to inside surface of fire-protection cabinets, square and plumb.

3.3 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as fire-protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust fire-protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. On completion of fire-protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes, or replace fire-protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire-protection cabinet and mounting bracket manufacturers.

E. Replace fire-protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 10440

SECTION 10441 FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes portable, hand-carried fire extinguishers and mounting brackets for exterior rated (weatherproof) fire extinguishers.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.

B. Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.

C. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1. Provide fire extinguishers approved, listed, and labeled by FMG.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure of hydrostatic test according to NFPA 10.
b. Faulty operation of valves or release levers.

2. Warranty Period: Six years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

A. Fire Extinguishers: Type, size, and capacity for each location indicated.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. J. L. Industries, Inc.; a division of Activar Construction Products Group.
b. Larsen's Manufacturing Company.
c. Potter Roemer LLC.

2. Valves: Metal.
3. Handles and Levers: Manufacturer's standard.
4. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.

B. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 2-A:10-B:C, 6 lb. nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.

2.2 MOUNTING BRACKETS

A. Mounting Brackets: Manufacturer's standard galvanized steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or red baked-enamel finish.

B. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.

1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.

a. Orientation: Vertical.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged fire extinguishers.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.

1. Mounting Brackets: 54 inches (1372 mm) above finished floor to top of fire extinguisher.

B. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

END OF SECTION 10441

SECTION 10530 - OVERHEAD SUPPORTED ALUMINUM CANOPY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pre-engineered, pre-finished Suspended extruded aluminum canopies.

1.2 REFERENCES

A. American Architectural Manufacturers Association (AAMA):
   1. AAMA 603 - Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.
   2. AAMA 605 - Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
   3. AAMA 607.1 - Voluntary Guide Specification and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.
   4. AAMA 608.1 - Voluntary Guide Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum.

1.3 DESIGN REQUIREMENTS

A. Struts, Gutter Beams, Deck, and Trim: Aluminum extrusions.

B. Structural Framing: Interlocking deck sections secured by screws.

C. Canopy: Self-draining from deck into perimeter gutter frame through scuppers to discharge point at ground level or as otherwise shown.

D. Building Code: _International Building Code 2015_

E.

F. Design Loads:
   1. Comply with Building Code for site location.

G. Structural Design: Prepare complete structural design calculations for canopy.

1.4 SUBMITTALS

A. Submit under provisions of Section 01340.

B. Product Data: Manufacturer's catalog data, detail sheets, and specifications.

C. Shop Drawings: Layout and erection drawings showing roof framing, deck panels, cross sections, and trim details, clearly indicating proper assembly.

D. Samples: Color selection samples consisting of actual coating material or anodizing process on aluminum extrusions.

E. Quality Assurance/Control Submittals:

1. Qualifications: Letter certifying manufacturer's required qualifications.
2. Structural Design Calculations.
3. Manufacturer's Installation Instructions.

1.5 QUALITY ASSURANCE

A. Overall Standard: Structural engineering design documents stamped by a structural engineer registered to practice in the State of Louisiana.

B. Manufacturer Qualifications: Minimum five years experience in producing covers/canopies of the type specified.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Follow manufacturer's instructions.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:
1. Perfection Architectural Systems, Inc., or EQUAL.
2310 Mercator Drive Orlando, FL 32807; ASD.
Tel: (800) 238-7207, Fax: (407) 671-8252.

B.

C. Provide all overhead supported canopy components from a single manufacturer.

2.2 MATERIALS

A. Aluminum Extrusions: 6063 alloy, T-6 temper.

2.3 COMPONENTS

A. Struts:
1. Aluminum tubular extrusion of size shown on shop drawings.

B. Gutter Beam:
1. Size: As shown on shop drawings.

C. Deck: Rigid-Roll-Lock extruded aluminum, self-flashing, interlocking sections.
1. Size and Profile: As required by structural engineering design.

D. Flashing: Aluminum sheet, thickness as recommended by manufacturer for specific condition.

2.4 ACCESSORIES

A. Fasteners:
1. Deck Screws: No. 14 by 1 inch (25 mm), self-tapping, Type 18-8 stainless steel with neoprene washers.

2. Trim Screws: No. 10 by 1/2 inch (13 mm), self-tapping, Type 18-8 stainless steel.
3. Other Fasteners: Type 18-8 stainless steel, type recommended by manufacturer for specific condition.

2.5 FABRICATION

A. Shop Assembly: Fabricate with corners mitered and heli-arc welded to the extent that completed pieces can be shipped on local, state, and federal highways without special permit. Provide bolted connections for elements required to be shipped unassembled.

2.6 FINISHES

A. Struts:
1. Thermo-Set Enamel: AA-C-12C-42R-1, comply with AAMA 603.
a. Color: As selected by architect from manufacturer's standard color range.

B. Deck:
1. Thermo-Set Enamel: AA-C-12C-42R-1, comply with AAMA 603.
a. Color: As selected by architect from manufacturer's standard color range.

C. Fascia/Gutter:
1. Thermo-Set Enamel: AA-C-12C-42R-1, comply with AAMA 603.
a. Color: As selected by architect from manufacturer's standard color range.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify locations and elevations.

B. Examine building surfaces to which canopy will connect.

C. Coordinate with responsible trade to perform corrective work on unsatisfactory surfaces.

D. Commencement of work by installer is acceptance of existing conditions.

3.2 ERECTION

A. Erect protective covers in accordance with manufacturer's installation instructions.

B. Set plumb, straight, and true to line, adequately braced to maintain position.
C.
D. Keep aluminum surfaces from direct contact with ferrous metal or other incompatible materials by applying one coat of clear acrylic coating.

3.3 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer.

B. Remove surplus materials and debris from the site.

3.4 PROTECTION

A. Protect finished aluminum surfaces from damage due to subsequent construction operations.

END OF SECTION 10530

SECTION 10730 - SPECIALTIES MANUFACTURER OF PROTECTIVE COVERS

PART 1 - GENERAL

1.1 DESCRIPTION OF PRODUCT

A. Shelter Type: **12'x24' Barrel Vault with Mega-Rib Roofing.**
B. Roof Slope: **0:12**
C. Clear height under Tie Beam (UTB): **12'-0".** This is the clearance under the tie beam which spans between the columns.

1.2 REFERENCES

A. REFERENCED STANDARDS
   1. AISC – American Institute of Steel Construction
      a. AISC Steel Construction Manual – 14th edition
      b. AISC 360-10 Specification for Structural Steel Buildings
   2. ASTM – American Society for Testing and Materials
      a. ASTM A36/A36M – Standard Specification for Carbon Structural Steel; 2008
      b. ASTM A325 – Standard Specification for Structural Steel Bolts, Heat Treated, 120/105 ksi Minimum Tensile Strength; 2010
      c. ASTM A563 – Standard Specification for Carbon and Alloy Steel Nuts; 2007a
      d. ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2010a
      e. ASTM A653/A653M – Standard Specification for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanealed) by the Hot Dip Process; 2010
      f. ASTM A792/A792M – Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process; 2010
      g. ASTM F1554 – Standard Specification for Anchor Bolts, Steel, 36, 50 and 105 ksi Yield Strength; 2007a
   3. AWS – American Welding Society
      a. D1.1
      b. D1.3
      c. D1.8
   4. OSHA – Occupational Safety and Health Administration
      a. Steel Erection Standard 29 CFR 1926.750 Part R
   5. SSPC – Steel Structures Painting Council
      a. SSPC-SP 2 – Hand Tool Cleaning; 2004
      b. SSPC-SP 10/NACE No. 2 – Near White Blast Cleaning; 2007
   6. LEED – Leadership in Energy and Environmental Design
   7. ISO – International Organization for Standardization

1.3 SYSTEM DESCRIPTION

A. The structure shall be a pre-engineered package and shall be shipped as a pre-cut (excluding standing seam roof panels) and pre-fabricated package that shall include the structural framing members, roof panels, fasteners and roof trim as well as job specific installation instructions. The structure will be shipped in an un-assembled package for ease of shipment and minimum shipping charges.

1.4 SUBMITTALS

A. Submit a minimum of four (4) sets of submittal drawings and (2) sets of structural calculations signed and sealed by a Professional Engineer licensed in the state of Louisiana.

B. PRODUCT DESIGN REQUIREMENTS:
   1. The structure shall meet the following design requirements:
      a. Building Code: Louisiana Building Code 2021
      b. Ground Snow Load: 20 p.s.f.
      c. Live Load: 20 p.s.f.
      d. Wind Speed: 130 m.p.h. Exp “C”
      e. Seismic Design Category: D

C. SUBMITTAL REQUIREMENTS
   1. Calculations:
      a. Design according to the requirements of the national, state, or local building codes as indicated in Section 1.04.B.
      b. Calculations shall include all member design for each different member type.
      c. Connection design for each different connection that will determine the design of the bolts, welds, plate thickness and anchorage to the foundation.
      d. Foundation design shall be for the loads applied, not a generic foundation design, while taking into account all soils information.
   2. Submittal Drawings:
      a. Anchor bolt layout with all appropriate dimensions for installation.
      b. Site specific foundation design.
      c. Isometric as well as elevation and plan views of the framing members along with the member sizes and locations indicated on the drawings.
      d. Connection details for every connection on the frame.
      e. Roof panel connections and trim installation details.
      f. All accessories on the structure shall have an installation detail as well as connection details.

D. FOUNDATION DESIGN
   1. The foundation design shall be supplied by the manufacturer.
   2. Anchor bolts shall be supplied by the manufacturer.
   3. Foundation materials and labor shall be provided by the structure contractor.
   4. Owner should provide site specific soils information for proper foundation design, if that data is not provided the foundation will be design for the minimum soil values allowed by code.

1.5 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS
   1. The product shall be designed, engineered and fabricated at a facility operated and directly supervised by the manufacturer.
   2. The manufacturer shall have a minimum of 15 years in steel shelter fabrication.
   3. Full Time on Staff Quality Assurance Manager.
   4. American Society for Quality (ASQ) Certified Quality Manager/Organizational Excellence and/or ASQ Certified Quality Engineer on staff.

5. All welders must be AWS certified for welding steel structures.
6. Membership in the American Welding Society (AWS).
7. Membership in the American Institute of Steel Construction (AISC).
8. Full Time on Staff Licensed Engineer.
9. Published Quality Control System manual.
10. Quality Control System must pass an annual audit by a Third-Party Agency.
11. ISO 9001 certification for Powder Coating System.
12. LEED AP on staff.

B. MANUFACTURER'S CERTIFICATIONS
1. Clark County, NV Approved Fabricator.
2. City of Los Angeles, CA Approved Fabricator Structural Steel
3. State of Utah
4. City of Phoenix, AZ
5. City of San Bernardino, CA
6. Riverside, CA

1.6 FIELD OR SITE CONDITIONS

A. Foundations shall be installed per the ICON installation drawings.
1. All foundations shall be cast at the same elevation unless specifically noted on the ICON installation drawings.

B. Anchor bolts shall be placed in the foundation as per the ICON installation drawings utilizing the anchor bolt template supplied with the anchor bolts.
1. Anchor bolts shall be installed per the dimensions and orientation shown on the drawings.

1.7 MANUFACTURER WARRANTY

A. Shelter shall have a 15-year limited warranty on the steel framing members.

B. For all Metal Roofing there will be a pass-through warranty direct from the metal Roofing supplier, warranty shall be provided on request.

2.1 SHELTER SYSTEM AND MATERIALS

A. MANUFACTURERS:
1. Acceptable Manufacturer: ICON Shelter Systems, Inc., 1455 Lincoln Rd., Holland, MI, 49423. Email: info@iconshelters.com, Website: www.iconshelters.com.
2. Pricing for this specific project and specified shelter can be requested from:
    1) Christina Swift
    P.O. Box 792110
    New Orleans, LA 70179
    (504) 342-4961
    Christina@swiftrecllc.com
3. The product shall be designed and fabricated at a facility operated and directly supervised by the manufacturer.

B. SUBSTITUTION LIMITATIONS:
1. Substitutions must be approved a minimum of ten (10) business days prior to bid. All approved manufacturers shall be notified in writing before the bid date and shall not be

allowed to bid without written notification. Any approval of an alternate manufacturer shall be through an official bid addendum prior to the bid date.

2. Alternate manufacturers shall meet the requirements, qualifications and provide proof of certifications listed under Section 1.05 QUALITY ASSURANCE.
3. Alternate manufacturers shall provide documentation that the power-coat system being provided meets or exceeds the ICON supplied powder-coat system listed under Section 2.1.C.8.

C. PRODUCT REQUIREMENTS AND MATERIALS:

1. GENERAL:
   a. The pre-engineered and pre-fabricated package of parts shall be pre-cut and packaged unless noted otherwise. These packages will include all parts and pieces necessary to field assemble the shelter at the jobsite. The shelter shall be shipped in knocked down format to minimize shipping expenses. Field labor will be kept to a minimum with no on-site welding required.
2. CONCRETE FOR FOUNDATIONS:
   a. Concrete shall have a minimum 28-day compressive strength of 2,500 psi unless noted otherwise on the foundation detail.
   b. Reinforcing steel shall be ASTM A615, Grade 60.
3. COLUMNS:
   a. Hollow Structural Section (HSS) columns shall meet ASTM A500, Grade B with a minimum
      wall thickness of 3/16" (0.1875").
   b. Unless the columns are direct buried in the foundation the columns shall attach to the foundation with a minimum of four (4) anchor rods and shall meet OSHA Steel Erection Standard 29 CFR 1926.755(a)(1).
4. STRUCTURAL FRAMING:
   a. All Hollow Structural Sections (HSS) shall meet ASTM A500, Grade B.
   b. Wide flange beams, tapered columns or open channel sections shall meet ASTM A36.
5. COMPRESSION RINGS:
   a. Compression rings shall be made of ASTM A36 structural plate or of structural channel welded together to form the ring. All connections not requiring compression rings shall use ASTM A500, Grade B HSS sections for these connections.
6. CONNECTION REQUIREMENTS:
   a. Anchor rods shall be ASTM F1554, Grade 36 unless otherwise noted.
   b. Structural fasteners shall be ASTM A325 high strength bolts and A563 nuts.
   c. All structural fasteners shall be hidden within the framing members whenever possible.
   d. No field welding shall be required to finish the construction of the shelter.
7. ROOFING MATERIALS:
   a. PRIMARY ROOF DECK – MEGA-RIB METAL ROOFING
      1) Roofing shall be a minimum of 24-gauge Galvalume steel sheet with ribs that are 1 1/2"
      tall and 7.2" on center. Ribs shall run with the slope of the roof for proper drainage.
      2) Roof outside surface shall be a baked on Kynar 500 paint finish and shall be supplied in one of the manufacturer's standard colors: TBD Ceiling color to be a "wash coat" primer.
      3) Roof panels shall have the roof angles factory pre-cut to size to provide ease of installation.
      4) Metal roofing trim shall match the color of the roof and shall be factory made

from 26- gauge Kynar 500 painted Galvalume sheet steel.

5) Trim includes panel ridge caps, hip caps, eave "J" trim, splice channels, rake trim, roof peak cap and corner trim as applicable for the model selected. Trim may need to be field cut to length. Please refer to the installation drawings for additional information and detail.
6) Ridge, hip and valley caps shall be pre-formed with a single central bend to match the roof slope and shall be hemmed on both edges.
7) Roof peak caps shall be pre-fabricated with no field assembly required.
8) Manufacturer shall supply roof screws painted to match the roof.

8. FACTORY FRAME FINISH:
   a. E-COAT/ POWDERCOAT:
      1) The steel shall be shot-blasted to the specification of SSPC-SP10 near white blast cleaning. SSPC-SP2 hand tool cleaning will not be an acceptable alternative.
      2) The shot-blasted parts are then washed with zinc-phosphate in an eight (8) stage washer.
      3) The steel is then immersed in a liquid epoxy and coated through an electro-deposition process (E-coat).
      4) The parts are then coated with a color coat of TGIC Super durable polyester powder for a final finish thickness of 5 to 10 mils.
9. ACCESSORIES
   a. ELECTRICAL ACCESS
      1) Standard in all column bases is a 3" diameter hole, located in the center of the plate. This allows electrical wiring into the column base.

PART 3 - EXECUTION

3.1 STORAGE AND HANDLING

A. When the shelter arrives at the jobsite protect the products from weather, sunlight and damage.

B. When unloading, pad the forks and use other precautions to protect the powder-coated finish. Do not use chains to move the materials, use straps. Handle all materials carefully in the field to avoid scratching the powder-coat finish.

C. Contractor shall store the product elevated from the soil to allow full air circulation around the materials as to not introduce mold, decay, fungi or insects into or on the materials. One end of the materials shall be elevated higher than the other end if storage will be longer than a few days as to allow the water to run off the materials.

3.2 INSTALLATION OF MATERIALS

A. The shelter shall be placed on prepared foundations that were designed by the manufacturer (unless otherwise noted). Materials for these foundations are not supplied by ICON but by the foundation installation contractor. Foundation shall be constructed to all local building code requirements and per good construction practices for the specific site conditions.
   1. In accordance with OSHA Steel Erection Standard 29 CFR 1926.750 Part R, anchor rods shall be installed for proper column stability and shall have a minimum of four (4) anchor bolts per column. Therefore, no single anchor rod column base connections shall be allowed.

B. The contractor shall install all parts and pieces per the manufacturer's supplied installation instructions
and these specifications.

C. The interface with other work required is to be coordinated by the customer or the customer's agent.
Some design may have electrical or plumbing requirements that are not supplied by ICON.

D. Tolerances on structural steel members are set according to AISC Code of Standard Practice for Steel Buildings and Bridges and have been used for the fabrication of this product. These tolerances will not and cannot be increased. No field slotting or opening of holes will be allowed without proper guidance from the ICON Engineering Department.

3.3 REPAIR

A. No field modifications or corrections are allowed without authorization from the ICON Engineering Department.

3.4 SITE QUALITY CONTROL

A. ICON does not require any on-site inspections or testing but these may be required by local authorities and the local building inspector. Please be aware of any on-site requirements prior to starting installation.

END OF SECTION 10730

SECTION 10800 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Toilet and bath accessories.
2. Underlavatory guards.

B. Related Sections include the following:
1. Division 10 Section "Toilet Compartments" for compartments and screens.

1.3 SUBMITTALS

A. Product Data: Include construction details, material descriptions and thicknesses, dimensions, profiles, fastening and mounting methods, specified options, and finishes for each type of accessory specified.

B. Samples: For each accessory item to verify design, operation, and finish requirements.
1. Approved full-size Samples will be returned and may be used in the Work.

C. Setting Drawings: For cutouts required in other work; include templates, substrate preparation instructions, and directions for preparing cutouts and installing anchoring devices.

D. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required. Use designations indicated in the Toilet and Bath Accessory Schedule and room designations indicated on Drawings in product schedule.

E. Maintenance Data: For accessories to include in maintenance manuals specified in Division 1. Provide lists of replacement parts and service recommendations.

1.4 QUALITY ASSURANCE

A. Source Limitations: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise approved by Architect.

B. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the Toilet and Bath Accessory Schedule.
1. Products of other manufacturers listed in Part 2 with equal characteristics, as judged solely by Architect, may be provided.
2. Other manufacturers' products with equal characteristics may be considered. See Division 1 Section "Substitutions."
3. Do not modify aesthetic effects, as judged solely by Architect, except with Architect's

approval. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.

1.5 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by disabled persons, proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.6 WARRANTY

A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Manufacturer's Mirror Warranty: Written warranty, executed by mirror manufacturer agreeing to replace mirrors that develop visible silver spoilage defects within minimum warranty period indicated.
1. Minimum Warranty Period: 15 years from date of Substantial

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering accessories that may be incorporated into the Work include, but are not limited to, the following:
1. Toilet and Bath Accessories:
a. Bobrick Washroom Equipment, Inc.
b. Bradley Corporation.
c. Continental Manufacturing Co.
d. General Accessory Manufacturing Co. (GAMCO).
2. Underlavatory Guards:
a. Brocar Products, Inc.
b. Truebro, Inc.

2.2 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.

B. Sheet Steel: ASTM A 366/A 366M, cold rolled, commercial quality, 0.0359-inch (0.9-mm) minimum nominal thickness; surface preparation and metal pretreatment as required for applied finish.

C. Baked-Enamel Finish: Factory-applied, gloss-white, baked-acrylic-enamel coating.

D. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.

E. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

F. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.3 FABRICATION

A. General: Names or labels are not permitted on exposed faces of accessories. On interior surface not exposed to view or on back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.

B. Surface-Mounted Toilet Accessories: Unless otherwise indicated, fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with continuous stainless-steel hinge. Provide concealed anchorage where possible.

C. Recessed Toilet Accessories: Unless otherwise indicated, fabricate units of all-welded construction, without mitered corners. Hang doors and access panels with full-length, stainless steel hinge. Provide anchorage that is fully concealed when unit is closed.

D. Framed Glass-Mirror Units: Fabricate frames for glass-mirror units to accommodate glass edge protection material. Provide mirror backing and support system that permits rigid, tamper-resistant glass installation and prevents moisture accumulation.
   1. Provide galvanized steel backing sheet, not less than 0.034 inch (0.85 mm) and full mirror size, with nonabsorptive filler material. Corrugated cardboard is not an acceptable filler material.

E. Mirror-Unit Hangers: Provide mirror-unit mounting system that permits rigid, tamper- and theft- resistant installation, as follows:
   1. One-piece, galvanized steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.

F. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.

C. Install grab bars to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.3 TOILET AND BATH ACCESSORY SCHEDULE

A. Toilet Tissue Dispenser: Where this designation is indicated, provide toilet tissue dispenser complying with the following:
1. Products:
   a. Bradley: model 5084
   b. Equal products of other manufacturers.
2. Type: Single-roll dispenser
3. Mounting: Surface mounted with concealed anchorage
4. Material: Stainless steel
5. Operation: Noncontrol delivery with mfr's standard spindle
6. Capacity: Designed for one 4-1/2” by 5” rolls with standard cores

B. Towel Dispenser (Toilet Rooms and Restrooms): Where this designation is indicated, provide stainless-steel combination unit complying with the following:
1. Products:
   a. Bradley: model 234
   b. Equal products of other manufacturers.

2. Recess-mounted Type: Designed for recessed-mounted installation with continuous, seamless wall flange; towel dispenser in unit's upper compartment designed to dispense minimum of 600 C-fold or 800 multifold paper towels and 12-gallon waste container in unit’s lower compartment.

C. Towel Dispenser (Kitchen): Where this designation is indicated, provide stainless-steel combination unit complying with the following:
1. Products:
   a. Bradley: model 250-15
   b. Equal products of other manufacturers.

2. Surface-mounted Type: Designed for surface-mounted installation with continuous, seamless wall flange; towel dispenser in unit's upper compartment designed to dispense minimum of 400 C-fold or 525 multifold paper towels.

D. Grab Bar: Where this designation is indicated, provide stainless-steel grab bar complying with the following:
1. Products:
   a. Bradley: model #812; configuration numbers 001-36” and 001-42”

b. Equal products of other manufacturers

2. Stainless-Steel Nominal Thickness: Minimum 0.05 inch (1.3 mm).
3. Mounting: Concealed with manufacturer's standard flanges and anchors.
4. Gripping Surfaces: Manufacturer's standard slip-resistant texture
5. Outside Diameter: 1-1/2 inches (38 mm) for heavy-duty applications.

E. Mirror Unit: Where this designation is indicated, provide mirror unit complying with the following:
1. Products:
a. Bradley: model #780-2436
b. Equal products of other manufacturers

2. Stainless-Steel, Angle-Framed Mirror: Fabricate frame from minimum nominal 0.05-inch-(1.3 mm-) thick stainless-steel angles, with square corners mitered, welded, and ground smooth.

F. Soap Dispenser: Where this designation is indicated, provide mirror unit complying with the following:
1. Products:
a. Bradley: model #650
b. Equal products of other manufacturers

2. Surface-mounted liquid soap dispenser, 32-ounce capacity with push-up type soap valve.

G. Shower Rod / Curtain: Where this designation is indicated, provide mirror unit complying with the following:
1. Products:
a. Bradley: model #9533 curtain, model #9538 rod (verify length in field), with model #9540 curtain hooks.
b. Equal products of other manufacturers

2. Shower curtain shall be 6-gauge white vinyl with hemmed top edge, aluminum grommets on 6-inch centers. Shower rod shall be 1-inch diameter satin finish stainless steel with concealed mounting. Curtain hooks shall be stainless steel spring wife with ball-bearing rollers

H. Robe Hooks: Where this designation is indicated, provide mirror unit complying with the following:
1. Products:
a. Bradley: model #9114.
b. Equal products of other manufacturers

2. Satin stainless steel single robe hook, surface mounted with vandal-resistant escutcheons.

I. Underlavatory Guard: Where this designation is indicated, provide underlavatory guard complying with the following:

1. Insulating Piping Coverings: White, antimicrobial, molded-vinyl covering for supply and drain piping assemblies intended for use at accessible lavatories to prevent direct contact with and burns from piping. Provide components as required for applications indicated with flip tops at valves that allow service access without removing coverings.

END OF SECTION 10800

SECTION 15500 – PLUMBING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions, and other Sections of Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes all material, methods, and accessories for the above ground plumbing systems, including: fixtures, floor drains, roof drains, receptors, stops, p-traps, water heaters, faucets and fittings. Administrative requirements include permits and inspections, warranties, and code compliance documentation.

B. Work shall include replacement of various fixtures and trim, including flush valves, p-traps, supply lines, stops, etc., as well as installation of new fixtures as indicated.

1.3 COORDINATION WITH PLANS AND SPECIFICATIONS

A. Coordinate requirements for accessories, p-traps, offsets, stops, escutcheons, valves, fittings, and rough in requirements with the fixture schedule located in the drawings and other work described in Division 23.

1.4 GENERAL REQUIREMENTS

A. Fixtures, specialties, and accessories shall comply with applicable standards and codes, including the local authority having jurisdiction.

B. ADA-compliant faucets and fixtures shall meet the complete requirements for the Americans with Disabilities Act.

C. All piping shall be insulated, or under-lavatory protection system be put in place for all lavatories identified as ADA-compliant or handicapped accessible.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Fixtures

1. Kohler
2. American Standard
3. Gerber
4. Elkay

B. Hose Bibbs, Flush Valves, Supports, Stops, Cleanouts, Specialties, Accessories

1. Josam
2. Zurn
3. Sloan
4. BrassCraft
5. NIBCO
6. Jay R. Smith
7. TrueBro

2.2 SUPPORTS AND CARRIERS

A. All wall mounted fixtures shall be supported from the floor using adjustable floor- mounted fixture supports. Wall hangers are not acceptable.

B. Closely coordinate fixture support requirements with rough-in of waste and vent piping. Submit shop drawings to Architect for approval prior to commencement of work.

PART 3 – EXECUTION

3.1 FIXTURE INSTALLATION

A. Assemble fixtures, carriers, trim, and accessories in accordance with the manufacturer's written instructions,

B. Install fixtures level and plumb.

C. Install water supply piping with stop on each supply to each fixture being connected. Attach supplies to building substrate within pipe spaces behind fixtures. Install stops (with accessory escutcheons) in location easily accessible.

D. Furnish and install p-traps for fixtures which require them. Provide offset tailpieces on ADA- compliant fixtures. P-traps and exposed waste piping shall be chrome plated brass with adjustable lock-nut assemblies. Omit traps on fixtures with integral traps.

E. Install flushometer valves for ADA-compliant fixtures with handle mounted on wide side of the compartment.

F. Provide open front seats without covers on all water closets.

G. Provide no-lead construction of all faucets and fittings, in compliance with the Clean Water Act.

H. Set floor drains in new building construction. Coordinate location, sloping, flashing, and other installation requirements with work of other trades.

I. Seal joints between fixtures and walls, floors, counters, or other building elements.

Match sealant color to that of fixture.

J. Make required water, waste, and vent connection from main systems to individual fixtures.

3.2 CLEANING, ADJUSTMENT, AND FINAL ACCEPTANCE

A. Flush all supply piping systems with faucet strainers removed until water runs clear. Replace faucet strainers and tighter.

B. Test all flush valve fixtures to ensure adequate water delivery and positive shut-off after flushing cycle. Adjust valves as required to perform satisfactorily.

C. Thoroughly clean fixtures, faucets, valves, trim, and accessories prior to project closeout. Remove debris from strainers and reinstall.

D. Tighten all compression connections in water supplies. Replace defective compression fittings showing evidence of leaking, rust, or other malfunctioning.

E. Contractor, Owner's Representative, and Architect / Engineer must verify all proper fixture operation prior to final acceptance.

END OF SECTION 15500

SECTION 15520 – PIPING AND VALVES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions, and other Sections of Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes piping, fittings, and valves that are common to several Division 22 and 23 sections. The work and material described in this section includes: sanitary sewer piping, water distribution piping, drain piping (from equipment), refrigerant piping, isolation valves, balancing valves, and meters.

PART 2 – PRODUCTS

2.1 PIPE AND FITTINGS

A. Provide pipe conforming to the following descriptions and standards. See Part 3 for applications.

1. Standard Weight Steel Pipe 2" and smaller: seamless or butt-welded, black or galvanized (ASTM A53)
2. Scheduled Steel Pipe, seamless or continuous steel pipe, black or galvanized (ASTM A53, Grade A)
3. Steel Pipe Nipples: seamless galvanized or carbon steel pipe (ASTM A733, A53, and A106)
4. Ductile Iron Pipe: Mechanical and push on joints, with AWWA C104 cement-mortar lining, conforming with AWWA C151, Classes 50 and 51.
5. Flanged Ductile Iron Pipe: with barrel conforming to AWWA C115 Class 150 or 300, or with cement-mortar lining conforming to AWWA C104.
6. Cast Iron Soil Pipe: pitch coated, hub-and-spigot soil pipe and fittings (ASTM A74)
7. Hubless (No-Hub) Cast Iron Soil Pipe: service weight cast iron soil pipe with clamped neoprene connections (CISPI 301)
8. Seamless ACR Copper Tube: Types K and L, ASTM B88, water tube, annealed temper.
9. Hard Copper Tube: Seamless hard drawn copper tube, Type K, L or M, ASTM B88.
10. Copper Drainage Tube: Type DWV, ASTM B306
11. PVC Water Main: SDR/PR 160 hub-and-spigot with elastomeric gasket (ASTM D2672 and D3139)
12. PVC Plastic Pipe: Schedules 40, 80,and 120 (ASTM D1785) and type DWV (ASTM D2665)

B. FITTINGS

1. Malleable Iron: black or galvanized, screwed of butt-welded fittings, 150 psi (ASTM/ANSI B16.3)
2. Cast Iron: black or galvanized screwed drainage fittings (ASME/ANSI B16.12); recessed drainage pattern (ASME B1.20.1)
3. Cast Copper Alloy Solder Joint Fittings: Equal to NIBCO (ASME/ANSI B16.18)
4. Cast DWV Fittings: (ANSI B16.23)
5. Wrought DWV Fittings: (ANSI B16.29)
6. Wrought Copper and Bronze Fittings: (ANSI B16.22)
7. Wrought Copper Drainage Fittings: (ANSI B16.23)
8. Bronze Flanges: (ANSI B16.24, Classes 150 and 300)
9. Steel Butt-Welded Fittings: (ANSI B16.9)
10. Grooved Steel Pipe and Fittings: Equal to Grinnell "Gruv-Lok" or Victaulic
11. Ductile Iron and Gray Iron gasketed fittings: AWWA C110 standard pattern or AWWA C153 compact pattern, 250 psig min pressure rating, with AWWA C104 cement-mortar lining and AWWA C111 rubber gaskets.
12. Thredolets and Weldolets: Approved.

C. VALVES

1. Bronze Valves, 2" and less: threaded ends
2. Ball Valves, 4" and less: blowout proof, 3-piece construction, standard or conventional port, chrome-plated brass ball, RTFE seats and seals, threaded or flanged end connections
3. Ferrous Valves, 2 ½" and up: flanged ends
4. Valve Temperature and Pressure Ratings: not less than system pressure specified
5. Valve Sizes: same as upstream pipe size, unless indicated otherwise.
6. Extended Valve Stems: Required on all insulated valves
7. Valve Flanges: ASME B16.1 (cast iron), ASME B16.5 (steel), and ASME B16.24 (bronze)
8. Valve Grooved Ends: AWWA C606
9. Threaded: per ASME B1.20.1
10. Valve Bypass and Drain Connections: MSS SP-45

PART 3 – EXECUTION

3.1 PIPE APPLICATIONS

A. Pipe Schedule

1. Above Grade Sanitary Sewer and Vent: No-Hub Service Weight Cast Iron with Neoprene Sleeves –OR—Solid Core PVC. Use of foam core PVC is not allowed.
2. Domestic Water Distribution: Type L Hard Drawn Copper with solder-joint fittings
3. Equipment Drains: Copper Type DWV with solder-joint fittings

4. Refrigerant Piping: Type L Hard Drawn Copper with soldered fittings

B. General Pipe Installation Requirements

1. Route piping in concealed locations unless noted otherwise.
2. Install piping at required slope and support at required intervals for type of pipe and temperature of conveyed fluid.
3. Provide stainless steel hangers and supports to secure piping systems to structure. Provide ¼" stainless steel rods to suspend below-slab piping from slab reinforcing iron.
4. All components of an individual piping system shall be rated at or above the pressure and temperature ratings for the entire system.
5. Locate groups of piping in parallel, and, in general, run parallel to building lines and structure.
6. Install piping free of sags and bends, and limit unnecessary changes of direction.
7. Coordinate location, including relative height of installation, with work of other trades. Generally speaking, gravity drain piping shall take precedence over forced main and pressure piping.
8. Secure piping to structure while allowing for compression and expansion of piping.
9. Leaking joints shall be remade using new materials. Paint, caulk, or other methods of sealing leaks is forbidden.
10. Install pipe escutcheons through all wall, floor, and ceiling penetrations, regardless of whether the penetration is concealed or not.
11. Install sleeves where piping passes through floors, walls, and roof sections. Fill and caulk the annular space for a water-tight seal, and ensure caulking is installed in accordance with its listing for penetrations in fire-resistive construction (fire and fire/smoke barriers).

3.2 VALVE APPLICATIONS

A. Valve Schedule

1. Water Shutoff Service: Ball or Butterfly
2. Throttling Service: Ball

B. General Valve Installation Requirements

1. Inspect valve and turn through entire service range prior to installation to ensure proper functioning.
2. Examine threads on threaded valve ends to verify no damage has taken place and threads are clean.
3. Align mating flanges and verify bolt holes and gasket assembly matches.
4. Do not attempt to repair or rebuild damaged valves – replace with new.
5. Install valves with unions or flanges at pieces of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
6. Locate valves for easy access and inspection.
7. Install valves in horizontal piping with stems at or above center of pipe.
8. Install isolation valves at each branch or riser connections to mains or as indicated.
9. On solder-joint valves with plastic components, take caution not to exceed

temperature rating of plastic components during soldering activity.

10. Install hose-end drain valves at the base of each riser, at low points in the system, and where required to drain water piping.

3.3 PRESSURE TESTING, FLUSHING, AND CHEMICAL TREATMENT

A. Pressure test all piping systems prior to covering.

1. For gravity systems, block downstream discharge at connection to existing utilities, and fill with water. Inspect piping system after six hours to determine if leaks are present. Repair or replace leaking components as required.
2. For pressure systems, test piping at 125 psig for a minimum of 2 hours. Repair or replace leaking components as required.
3. Remove temporary plugs in piping after testing is complete.
4. Contractor shall provide initial fill of rust-inhibitor / corrosion protection and anti-scale chemicals immediately following flushing and testing of piping system.
5. Provide pot feeder at each chilled water plant (install across primary system circulating pump). Provide union connections and full-port ball valves at inlet and outlet of pot feeder.

END OF SECTION 15520

SECTION 16005 – MINOR ELECTRICAL DEMOLITION FOR REMODELING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide demolition of existing electrical installation as required to suit project intent. Extend existing installation and repair/replace existing equipment as specified herein.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work shall be as specified in individual Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify field measurements and existing circuiting arrangements. Verify that abandoned wiring and equipment serve only abandoned facilities. Demolition Drawings are based on casual field observation. Report discrepancies to Architect/Engineer before disturbing existing installation. Beginning of demolition means installer accepts existing conditions.

3.2 PREPARATION

A. Disconnect electrical systems in walls, floors, and ceilings scheduled for removal. Coordinate utility service outages with Utility Company. Provide temporary wiring and connections to maintain existing systems in service during construction.
B. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
   1. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Obtain permission from Owner and Architect/Engineer at least 7 days before partially or completely disabling system. Minimize outage duration.
   2. Existing Fire Alarm System: Maintain existing system in service. Disable system only to make switchovers and connections. Notify Owner and Architect/Engineer at least 7 days before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction. Remove abandoned wiring to source of supply.
B. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets which are not removed.

D. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
E. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
F. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.
G. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.4 CLEANING AND REPAIR

A. Clean and repair existing materials and equipment which remain or are to be reused. Expose and inspect existing branch circuit wiring terminations. Correct any deficient methods or materials to bring the installation into first class working condition.
B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

END OF SECTION 16005

SECTION 16010 – BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All drawings and general provisions of the contract, including General Conditions, Supplementary Conditions, and other Division 1 Specifications, apply to this section.

B. Separation of Specifications into Sections is for convenience only and is not intended to establish limits of work or liability. The following sections apply to this project:

16010 – Basic Electrical Requirements
16050 – Basic Electrical Materials and Methods
16200 – Panelboards
16410 – Lightning Protection

1.2 DESCRIPTION OF WORK

A. Furnish all labor, tools, materials, fixtures, equipment, accessories, transportation, etc., required for a complete electrical lighting and power systems, complete with necessary auxiliaries as indicated on the drawings and specifications.

B. Also included in the work is the power wiring for connection of items indicated on the architectural plans, as well as power wiring for the equipment specified in DIVISION 22 – PLUMBING and DIVISION 23 – MECHANICAL.

1.3 DRAWINGS AND SPECIFICATIONS

A. The drawings showing the layout of electrical work indicate the approximate location of transformers, switchboards, panelboards, disconnects, outlets, and conduit routing. The contractor shall refer to architectural, structural, and mechanical drawings as well as equipment manufacturer's shop drawings and rough-in drawings, and adjust work accordingly to provide a coordinated installation. All adjustments and minor deviations necessary shall be made without additional cost to the owner. It shall be the electrical contractor's responsibility to see that all equipment such as pull boxes, junction boxes, panelboards, and other apparatus, that may require maintenance from time to time, are made accessible. Any condition that may occur during construction which conflicts with accessibility to the proposed installation of the electrical equipment, shall be brought to the Architect's attention prior to the point at which a change in location would require additional cost and delays to construction. The contractor shall install fire alarm devices as near as possible to the locations indicated on the drawings but shall move them as necessary to avoid conflicts with existing equipment and to be located sufficiently away from heat producing objects.

B. Smoke detectors, heat detectors, and visual devices shall be located in accordance with NFPA 72 including that the maximum distance between smoke detectors is 30' and the maximum distance from a wall is 15'. The contractor shall plan for contingencies to include providing additional smoke, heat, and visual devices if necessary.

C. The drawings and specifications are complementary and what is shown and/or called for on one shall be furnished and installed the same as if shown and/or called for on the other.

D. Where the Contractor is not certain about the method of installation, he shall ask the Architect for further installation details. Lack of details, not requested, will not be an excuse for improper installation.

1.4 LAWS, CODES, AND PERMITS

A. The latest accepted edition of the National Electrical Code (NFPA 70), National Fire Alarm Code (NFPA 72), and all State, Parish, City, and local building codes shall be considered a part of these specifications, and pertinent articles will not be repeated herein. These codes establish the minimum acceptable criteria where more stringent requirements have not been defined in these specifications and/or drawings.

B. The Contractor shall apply for all permits and pay all fees incidental to completing the electrical work. This Contractor shall give notice to the proper authorities in ample time for the work to be inspected and approved as it progresses, and no work shall be concealed until inspected and approved by authorized inspectors. If the plans or these specifications in any way conflict with the Code, State or Local Rules, these latter are to be followed, without expense to the Owner, but the Architect via the Owner's Construction Manager shall be notified of this condition and approval secured before changes are made.

C. Upon completion and before acceptance of work, a certificate of approval from the appropriate regulatory agency shall be furnished to the Architect via the Owner's Construction Manager.

D. No work shall be concealed until approved by the local inspector. Local regulations shall be adhered to.

E. The contractor shall assure that he does not install electrical equipment including raceways in or through areas restricted by the international building code and local building codes including elevator shafts and stairs.

1.5 JOB SITE

A. Prior to submitting quotation for electrical work, Contractor shall visit and examine the job site with all authorities concerned in order to become familiar with all existing conditions pertinent to the work to be performed thereon. No additional compensation will be allowed for failure to be so informed.

B. Where existing equipment including raceways and wiring is in conflict with work of this project, the contractor shall rework/reroute/relocate this equipment as necessary.

1.6 TEMPORARY POWER

A. The Contractor shall be responsible for providing temporary light and power to the construction site as necessary to meet all of the OSHA requirements for construction, and as required by the general contractor and various sub-contractors.

1.7 SERVICE INTERRUPTIONS

A. Services to the buildings shall be kept in operation at all times during construction. If a situation occurs that the service needs to be interrupted, the Contractor shall be responsible for contacting the proper authorities to schedule the outage at a time that is convenient to the occupants. It shall be understood that this outage may have to be scheduled after regular working hours or on the weekends. Allowances shall be added to the Contractors bid to cover the cost of any overtime work. This shall come at no additional cost to the Owner after the bid date.

1.8 WARRANTY

A. The contractor shall guarantee all labor and materials for a period of twelve (12) months from the date of final acceptance. All defective materials and work shall be replaced with new materials or equipment. This shall come at no additional cost to the Owner.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Equipment and materials shall be new and shall be listed by Underwriters Laboratories for the purpose for which they are being used. All material of similar use shall be of the same manufacturer.

B. Substitutions to materials listed on the drawings and specifications can be made as long as they are approved as acceptable by the Architect.

C. All termination lugs shall be rated 75 degree C minimum and shall be compatible with the number and size of wires to be terminated.

2.2 SUBSTITUTIONS

A. Names of manufacturers or catalog numbers are mentioned herein in order to establish a standard as to design quality. Other products similar in design and of equal quality may be used if submitted to the architect and found acceptable by him. Refer to the general conditions for additional information.

B. When the contractor elects to use an acceptable alternate manufacturer's equipment, the contractor shall be responsible to coordinate the change with all trades affected and pay for any additional work required under this or any other division affected by the substitution.

2.3 SUBMITTALS

A. Within thirty days of the award of the contract, the Contractor shall be responsible for submitting six (6) copies of submittals containing catalog cuts and performance data for all material and equipment proposed for use. These submittals shall be reviewed by the Architect for general compliance to the contract documents. The Architect's review of these submittals in no way modifies the contract or relieves the Contractor from compliance with the contract unless a difference is clearly stated in the submission and specific acceptance is given by the Architect as a

change to the contract.

B. Submittals shall be identified with the project name and the contractors name and have the contractor's stamp showing that he has reviewed the submittal and found it to be in accordance with the plans and specifications. Items of Division 26 shall be submitted in one package.

C. Submittals that do not comply with the above will be returned, without review, for resubmission. All shop drawings must be reviewed before the various factories start fabrication.

PART 3 – EXECUTION

3.1 TECHNICIAN QUALIFICATIONS

A. A qualified Installer and service technician certified by the State of Louisiana and approved by the manufacturer. The fire alarm installation company shall have in-place a local support facility within one hundred miles of the job site.

B. This facility shall provide 24 hour service call handling, service personnel, spare parts inventory, and all necessary test equipment to troubleshoot, repair or replace any component within four hours of notification by the owner's representative.

3.2 INSTALLATION

A. Ask for details whenever uncertain about installation method. Lack of details requested shall not excuse proper installation and corrections shall be the responsibility of the contractor.

3.3 AS-BUILT DRAWINGS & OPERATING INSTRUCTIONS

A. The Contractor shall be responsible for providing As-Built drawings to the Architect through the Owner's Construction Manager at the completion of the project. The Contractor shall make a reproducible set of the original contract drawings in a neat and understandable manner and show any significant changes made during construction. Unless noted otherwise in the contract documents, the Contractor shall provide one additional copy of these drawings to the Architect. The Contractor shall pay for all reproduction costs. Final payment shall be withheld until these drawings are accepted by the Architect.

B. The Contractor shall furnish two bound sets of any operating instructions and maintenance manuals to the Architect upon completion of the project.

3.4 CUTTING AND PATCHING

A. The Contractor shall be responsible for all cutting and patching that is required to complete the installation of the electrical systems. All work shall be coordinated between trades with strict accordance with the requirements of the General Conditions. Structural members shall not be cut or modified without the approval of the architect.

B. The Contractor shall be responsible for covering, caulking, or otherwise to make weatherproof all

openings left in the structure for electrical work. This includes openings around conduit penetrations.

3.5 EXCAVATING AND BACKFILLING

A. The Contractor shall be responsible for all excavating and backfilling required to complete the installation of the electrical systems. All excess material and debris shall be removed. All excavating and backfilling shall comply with Division 312000 - Earthwork.

B. It shall be the Contractor's responsibility to locate all underground utilities before trenching and excavating. Care shall be taken to avoid damage to the existing utilities. Any damage shall be repaired or replaced by the Contractor at no expense to the Owner.

3.6 PAINTING

A. No painting shall be required under Division 26, except for factory-finished items. Any damaged surfaces of factory items shall be repaired by the Contractor to an acceptable level determined by the Architect.

3.7 EXISTING EQUIPMENT

A. The Contractor shall be responsible for the removal and reinstallation of any electrical equipment, such as light fixtures, that shall be reused. Any existing electrical equipment that is removed and not reused shall be returned to the Owner. Any material that the Owner does not wish to keep shall be removed from the site by the Contractor.

B. When existing electrical items such as outlets are removed from service, care shall be taken to keep the integrity of the remaining electrical systems.

END OF SECTION 16010

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Raceways.
   2. Wires, cables, and connections
   3. Wiring devices
   4. Grounding
   5. Safety Switches and fuses
   6. Supporting devices for electrical components.
   7. Equipment for utility company's electricity metering.

1.2 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories shall be listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Devices for Utility Company Electricity Metering shall comply with utility company published standards. Comply with NFPA 70.

1.3 COORDINATION

A. Coordinate chases, slots, inserts, sleeves, and openings for electrical supports, raceways, and cable with general construction work.

B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning before closing in the building.

C. Coordinate electrical service connections to components furnished by utility companies.

D. Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for service entrances and electricity-metering components.

E. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces.

F. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

PART 2 - PRODUCTS

2.1 RACEWAYS

A. EMT: Electrical metallic tubing; ANSI C80.3, zinc-coated steel.

B. FMC: Flexible metal conduit; zinc-coated steel.

C. IMC: Intermediate metal conduit; ANSI C80.6, zinc-coated steel, with threaded fittings.

D. LFMC: Liquidtight flexible metal conduit; zinc-coated steel with sunlight-resistant and mineral-oil-resistant plastic jacket.

E. RMC: Rigid metal conduit; galvanized rigid steel; ANSI C80.1.

F. RNC: Rigid nonmetallic conduit; NEMA TC 2, Schedule 40 or 80 PVC, with NEMA TC3 fittings. Raceway Fittings: Specifically designed for raceway type with which used.

2.2 WIRES, CABLES, AND CONNECTIONS

A. All conductors shall have 600V insulation type THHN/THWN Conductors, No. 10 AWG and Smaller: Solid copper. Conductors, Larger than No. 10 AWG: Stranded copper.

B. No wire shall be smaller than #12 AWG unless noted otherwise. All conductors shall be copper. Insulation: Thermoplastic, rated 600 V, 90 deg C minimum, Type THW, THHN-THWN, or USE depending on application.

C. Wire Connectors and Splices: Units of size, ampacity rating, material, type, and class suitable for service indicated.

2.3 WIRING DEVICES

A. Wall Switches shall be 20A, 277V, AC type designed for quiet operation. Duplex receptacles shall be 20A/2 pole, 3-wire, 125V, grounding type. All devices shall be specification grade Hubbell, Leviton, or equal.
All device plates shall be brushed stainless steel with matching counter sunk screws unless noted otherwise.

B. Consult with the Architect for color selections before ordering devices. Use multi-gang plates where devices are grouped together.

C. Boxes and fittings shall comply with article 370 of the NEC. Particular attention shall be paid to the number of conductors allowed in an outlet box or junction box. Contractor shall make provisions to prevent overcrowding outlet and junction boxes regardless of the number of conductors shown on the plans at the outlets.

2.4 GROUNDING

A. The grounding system shall be in accordance with N.E.C. Article 250.

B. A grounding conductor shall be provided in all conduit.

2.5 SAFETY SWITCHES AND FUSES

A. Safety switches shall be of the quick-make, quick-break, heavy-duty, fusible or non-fusible type with cover interlock to prevent opening of the door when the switch is in the “ON” position. Use NEMA 3R enclosures outdoors and NEMA 1 enclosures indoors, unless otherwise noted.

B . Provide a complete set of dual-element, class RK-1 fuses of ampere rating shown on the drawings. Furnish the owner with 20% spare fuses with at least one set for every rating.

C. All fuses shall have a minimum interrupting rating of 200,000 A.

2.6 SUPPORTING DEVICES

A. Material: Cold-formed steel, with corrosion-resistant coating.

B. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.

C. Slotted-Steel Channel: Flange edges turned toward web, and 9/16-inch- diameter slotted holes at a maximum of 2 inches o.c., in webs. Strength rating to suit structural loading.

D. Slotted Channel Fittings and Accessories: Recommended by the manufacturer for use with the type and size of channel with which used.

E. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.

F. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.

G. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for non-armored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.

H. Expansion Anchors: Carbon-steel wedge or sleeve type. Toggle Bolts: All-steel springhead type.

2.7 EQUIPMENT FOR UTILITY COMPANY'S ELECTRICITY METERING

A. Comply with requirements of electrical power utility company for current transformer cabinets, meter sockets, and modular meter centers.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

A. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom.

B. Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.

C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

D. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 RACEWAY APPLICATION

A. Outdoor Installations:
   1. Exposed: RMC.
   2. Concealed: RNC.
   3. Underground, Single Run: RNC.
   4. Underground, Grouped: RNC.
   5. Connection to Vibrating Equipment: LFMC.
   6. Boxes and Enclosures: NEMA 250, Type 3R or Type 4, unless otherwise indicated.

B. Indoor Installations:
   1. Exposed: EMT except in wet or damp locations, use IMC.
   2. Concealed in Walls or Ceilings: EMT.
   3. In Concrete Slab: RNC.
   4. Below Slab on Grade or in Crawlspace: RNC.
   5. Connection to Vibrating Equipment: FMC; except in wet or damp locations: LFMC.
   6. Boxes and Enclosures: NEMA 250, Type 1, unless otherwise indicated.

3.3 RACEWAY AND CABLE INSTALLATION

A. Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors. Exposed conduits shall be installed with runs arranged perpendicular to walls and ceilings. Keep legs of raceway bends in the same plane and keep straight legs of offsets parallel.

B. Install pull wires in empty raceways. Leave at least 12 inches of slack at each end of pull wires.

C. Connect motors and equipment subject to vibration, noise transmission, or movement with a maximum of 72-inches flexible conduit. Install LFMC in wet or damp locations. Install separate ground conductor across flexible connections.

D. Set floor boxes level and trim after installation to fit flush to finished floor surface.

E. Unless a larger size is indicated, raceways, troughs, and junction boxes shall be sized in accordance with the fill requirements of the NEC.

3.4 WIRING METHODS FOR POWER, LIGHTING, AND CONTROL CIRCUITS

A. Application: Use wiring methods specified below to the extent permitted by applicable codes as interpreted by authorities having jurisdiction.

B. Exposed Feeders: Insulated single conductors in raceway

C. Concealed Feeders in Ceilings, Walls, and Gypsum Board Partitions: Insulated single conductors in raceway.

D. **Concealed Feeders in Concrete: Insulated single conductors in raceway. The Contractor shall submit for approval, a diagram depicting the routing of conduits that shall be embedded in concrete. Verify structural specifications for more details**.

E. Exposed Branch Circuits: Insulated single conductors in raceway.

F. Concealed Branch Circuits in Ceilings, Walls, and Gypsum Board Partitions: Insulated single conductors in raceway. Concealed Branch Circuits: Insulated single conductors in raceway. Underground Feeders and Branch Circuits: Insulated single conductors in raceway.

G. Remote-Control Signaling and Power-Limited Circuits, Classes 1, 2, and 3: Insulated conductors in raceway unless otherwise indicated.

H. Not Allowed: NM for branch circuits.

I. Type MC cable shall NOT be acceptable.

3.5 WIRING INSTALLATION

A. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

B. No wires shall be pulled in until the conduit system is complete. Ideal “Yellow 77” or other approved pulling lubricant shall be used.

3.6 ELECTRICAL SUPPORTING DEVICE APPLICATION

A. Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, slotted channel system components. Dry Locations: Steel materials.

B. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four with, 200-lb minimum design load for each support element.

3.7 SUPPORT INSTALLATION

A. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.

B. Size supports for multiple raceway or cable runs so capacity can be increased by a 25 percent minimum in the future.

C. Support individual horizontal single raceways with separate, malleable-iron pipe hangers or clamps except use spring- steel fasteners for 1-1/2-inch and smaller single raceways above suspended ceilings and for fastening raceways to slotted channel and angle supports.

D. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.

E. Secure electrical items and their supports to building structure, using the following methods unless other fastening methods are indicated:
   1. Wood: Wood screws or screw-type nails.
   2. Gypsum Board: Toggle bolts. Seal around sleeves with joint compound, both sides of wall.
   3. Masonry: Toggle bolts on hollow block and expansion bolts on solid block. Seal around sleeves with mortar, both sides of wall.
   4. New Concrete: Concrete inserts with machine screws and bolts.
   5. Existing Concrete: Expansion bolts.
   6. Structural Steel: Spring-tension clamps.
   7. Light Steel Framing: Sheet metal screws.
   8. Fasteners for Damp, Wet, or Weather-Exposed Locations: Stainless steel.
   9. Light Steel: Sheet-metal screws.
   10. Fasteners: Select so load applied to each fastener does not exceed 25 percent of its proof-test load.

3.8 IDENTIFICATION MATERIALS AND DEVICES

A. Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

B. Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.

C. Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines.

3.9 ELECTRICITY-METERING EQUIPMENT

A. Install utility company metering equipment according to utility company's written requirements. Provide grounding and empty conduits as required by utility company.

3.10 FIRESTOPPING

A. Penetrations through rated construction shall be sealed with a material capable of preventing the passage of flames and hot gases when tested in accordance with ASTM-EB14.

a) Notify the Architect through the Owner's Construction Manager for inspection of all completed fire and/or smoke barrier walls before any construction is installed that would conceal construction and prevent a proper inspection. Access to random selected areas may be required by the Architect at the time of final inspection if this notification is not given.

b) Provide detailed instructive cut sheets of the fire penetration sealing system used to the Architect at the time of inspection. Random selective sampling by the Contractor will be observed by the Architect and the Fire Marshall's inspector.

3.11 MOUNTING HEIGHTS

A. Unless otherwise noted on the drawings or required by the Architect, the following mounting heights shall apply. Unless noted otherwise, mounting heights are to the centerline of the device:

1.	Receptacles	18” above floor
2.	Toggle Switches	48” above floor
3.	Panelboards	72” to top
4.	Telephone Outlets	18” above floor
5.	Data Outlets	18” above floor
6.	Meter Can	60”-72” to centerline

B. Mounting heights may be adjusted in masonry applications to simplify installation where approved by the Architect.

END OF SECTION 16050

SECTION 16200 - PANELBOARDS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes distribution and branch-circuit panelboards.

1.2 SUBMITTALS

A. Product Data: For each type of panelboard, overcurrent protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard, including the following:
   1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following data:
      a. Enclosure types and details for types other than NEMA 250, Type 1.
      b. Bus configuration, and current, and voltage ratings.
      c. Short-circuit current rating of panelboards and overcurrent protective devices.
      d. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices.
   2. Wiring Diagrams: Power, signal, and control wiring.

C. Panelboard Schedules: For installation in panelboards: Submit final versions after load balancing of operation and maintenance data.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NEMA PB 1. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Square D Co.
   2. Siemens Energy & Automation, Inc.
   3. Eaton Corp.; Cutler-Hammer Products.
   4. General Electric.

2.2 FABRICATION AND FEATURES

A. Enclosures: Flush- and surface-mounted cabinets. NEMA PB 1, Type 1, suitable for environmental conditions at installed location.
   1. Outdoor Locations: NEMA 250, Type 3R.
   2. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
   3. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7C.

B. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush- mounted fronts, overlap box.

C. Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat. Directory Card: A clear plastic directory holder shall be mounted inside panelboard door.

D. Bus: Hard-drawn copper, 98 percent conductivity.

E. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box. Panelboard Short-Circuit Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Panelboards with Main Service Disconnect: Listed for use as service equipment.

F. Spaces for Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

G. Feed-through Lugs: Locate at opposite end of bus from incoming lugs or main device.

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units. Doors: Front mounted with concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.4 DISTRIBUTION PANELBOARDS

A. Doors: Front mounted, and secured with vault-type latch with tumbler lock; keyed alike. Branch Overcurrent Protective Devices shall be one of the following:
   1. Bolt-on circuit breakers.
   2. Fused switches.

2.5 INTEGRATED TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICES

A. Surge Protective Device:
   1. SPD shall be Listed and Component Recognized in accordance with UL 1449 Second Edition to include Section 37.3 highest fault current category. SPD shall be UL 1283 listed.
   2. SPD shall be installed by and shipped from the electrical distribution equipment manufacturer’s factory.
   3. The TVSS devices in lighting and appliance panelboards shall be bus mounted between the main and branch devices. TVSS devices bussed off the end of the panelboard are not allowed. Panelboards with TVSS will accommodate thru- feed lugs and sub-feed circuit breakers in single section and multi-section panelboards.

4. The TVSS devices in power distribution panelboards shall be cable connected.
5. SPD shall provide surge current diversion paths for all modes of protection; L-N, L-G, N-G in WYE systems.
6. SPD shall be modular in design. Each mode including N-G shall be fused with a 200kAIR UL recognized surge rated fuse and incorporate a thermal cutout device. TVSS shall safely reach an end-of-life condition when subjected to fault current levels between 0 and 200 kA, including low level fault currents from 5 to 5000 amperes.
7. Audible diagnostic monitoring shall be by way of audible alarm. This alarm shall activate upon a fault condition. An alarm on/off switch shall be provided to silence the alarm. An alarm push to test switch shall be provided.
8. SPD shall meet or exceed the following criteria:
    a. Minimum surge current capability (single pulse rated) per phase shall be:
        1) Service Entrance panelboard locations: 240kA per phase
        2) Distribution and lighting and Appliance panelboard locations: 160kA per phase
    b. UL 1449 Suppression Voltage Ratings:

VOLTAGE	LOCATION	L-N	L-G	N-G
208Y/ 120V	Distribution:	400V	400V	400V
480Y/ 277V	Distribution:	800V	800V	800V

9. SPD shall have a minimum EMI/RFI filtering of up to –30 dB over the range of 100 kHz to 100 MHz.
10. SPD shall be provided with one set of NO/NC dry contacts.
11. The manufacturer of the electrical equipment in which the TVSS is installed shall warrant the integrated TVSS device to be free from defects in material and workmanship for a period of ten (10) years from the date of invoice the manu- facturer or its authorized sales channel.

2.6 OVERCURRENT PROTECTIVE DEVICES

A. Molded-Case Circuit Breaker: NEMA AB 1, with interrupting capacity to meet available fault currents.
    1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
    2. GFCI Circuit Breakers: Single- and two-pole configurations with 5mA trip sensitivity.
    3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
    4. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 55 percent of rated voltage. Verify exact voltage of shunt trip with fire alarm vendor.

B. Fused Switch: NEMA KS 1, Type HD; clips to accommodate indicated fuses; lockable handle.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install Panelboards and accessories according to NEMA PB 1.1.

B. Mounting Heights: Top of trim 86 inches above finished floor, unless otherwise indicated. Highest switch or breaker at 72” max above finished floor.

C. Mounting: Plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

D. Install filler plates in unused protective device spaces.

E. Wiring in Panelboard Gutters: Arrange conductors into groups and bundle and wrap with wire ties after completing load balancing.

F. Locate Panelboards so that ratings are not reduced by heat from external sources.

3.2 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 26 Section "Basic Electrical Materials and Methods."

B. Panelboard Nameplates: Label each panelboard with engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws.

C. Circuit Directory: Create a directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

3.3 FIELD QUALITY CONTROL

A. Testing and Inspection: After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

B. Balancing Loads: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes as follows:
   1. Measure as directed during period of normal system loading.
   2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data-processing, computing, transmitting, and receiving equipment.
   3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
   4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.4 ARC FAULT THIRD PARTY TESTING

A. Contractor shall provide third party testing for all branch circuit wiring. Arc Fault Breaker Testing shall be conducted with a simulated full load for arc fault false ground and proper wiring. Test reports for each receptacle will need to be submitted to Owner.

B. Contactor shall make changes as required for correct operation of circuits as recommended by the Third party test results with no additional cost to the Owner.

C. Testing Agency
   1. Contractor shall procure services of an independent testing agency which specializes in Arc Fault branch circuit testing.
   2. Agency shall provide proof of having successfully completed at least five projects of similar size and scope. Work shall be completed under direct supervision of a qualified Technician employed by the agency.
   3. Instruments used by the Agency shall be properly calibrated and maintained in good working order.
   4. If requested, conduct tests in presence of Engineer.

END OF SECTION 16200