March 22, 2024

Construction Documents - Project Manual

FOR:

South Beauregard High School Sewer Treatment Plant

For The Beauregard Parish School Board

151 Longville Church Road
Longville, Louisiana 70652

CEH Project #2300

Champeaux Evans Hotard
ARCHITECTS

South Beauregard High School **March 22, 2024**
Sewer Treatment Plant
for the Beauregard Parish School Board

PROJECT MANUAL
TABLE OF CONTENTS

Advertisement / Bid Notice
Instructions to Bidders
List of Required Documents
Insurance Requirements
2 C.F.R § 200.326 Federal Required and Recommended Contract Provisions
Louisiana Uniform Public Works Bid Form
Bid Bond Form
Resolution
Non-Collusion Affidavit
Affidavit (R.S. 38:2224, 38:2190, and 38:2290-2296, as amended)
Attestation Form – Past Criminal Conviction of Bidders (R.S. 38:2227)
Affidavit - Verification of Employees (R.S. 38:2212.10)
Subcontractor Approval List
Standard Form of Agreement Between Owner and Contractor, AIA Document A101-2017
Performance and Payment Bond
General Conditions of the Contract for Construction, AIA Document A201-2007
Beauregard Parish School Board Supplementary Conditions
Louisiana Department of Revenue Form R-1020 - Designation of Construction Contractor As Agent of a Governmental Entity Sales Tax Exemption Certificate
Application and Certificate for Payment, AIA Document A702-1992
Application and Certificate for Payment Continuation Sheet, AIA Document A703-1992
Change Order Form
Beneficial Occupancy Form
Recommendation of Acceptance Form
Applied Technology Council (ATC) Windspeed Determination
FEMA FIRMette w/ Flood Zone Determination

Technical Specification Sections (Listed Below)

DIVISION 1 – GENERAL REQUIREMENTS

011000	Project Summary
012100	Allowances
012300	Alternates & Unit Prices
012600	Contract Modification Procedures
012610	Weather-Related Delays
012900	Contract Payment Procedures
012900a	Sample Application for Payment and Billing Worksheet
012900b	Sample Application for Payment and Billing Worksheet
013100	Project Management and Coordination

013200	Construction Progress Documentation
013231	Pre-Construction Documentation
013300	Submittal Procedures
015000	Temporary Facilities and Controls
015010	Project Sign Requirements
017200	Construction Surveying
017700	Project Closeout Procedures
017839	Project Record Documentation

DIVISION 2 – EXISTING CONDITIONS

024119	Selective Demolition

DIVISION 3 – CONCRETE

033000	Cast-In-Place Concrete

DIVISION 5 – METALS

055000	Metal Fabrications

DIVISION 9 – FINISHES

099000	Painting & Coatings

DIVISION 10 – SPECIALTIES

101453	Site, Parking, and Traffic Signage

DIVISION 22 – PLUMBING

220000	Plumbing General Provisions
220519	Plumbing Piping
221116	Water Supply
221313	Waste Water Treatment Plant
221316	Waste Water Disposal

DIVISION 26 – ELECTRICAL

260001	Electrical General Provisions
260500	Electrical Basic Materials And Methods
260526	Grounding
260571	Acceptance Testing
260572	Overcurrent Protective Device Short-Circuit Study
260574	Overcurrent Protective Device Arc-Flash Study
262713	Electrical Distribution System
264313	Surge Protection For Low-Voltage Electrical Power Circuits

South Beauregard High School **March 22, 2024**
Sewer Treatment Plant
for the Beauregard Parish School Board

DIVISION 31 – EARTHWORK

311000	Site Clearing
312000	Earth Moving
312100	Sitework
314116	Vinyl Sheet Piles

DIVISION 32 – EXTERIOR IMPROVEMENTS

321220	Crushed Limestone Base
323100	Chain Link Fences & Gates
329200	Hydroseeding & Sodding

DIVISION 33 – SITE IMPROVEMENTS

334100	Storm Utility Drainage Piping

Beauregard Parish School Board

202 W. Third Street ~ P.O. Drawer 938
DeRidder, Louisiana 70634
Ph. (337) 463-5551 ~ Fax (337) 463-6735

Cynthia LaFitte, President — Bryan Redler, Vice President

Larry Hollie, M. Ed., Superintendent

CONSTRUCTION BID NOTICE

The Beauregard Parish School Board will take sealed bids for the project: South Beauregard High School - Sewer Treatment Plant. Bids should be in the Central Office by 2:00 P.M. on Thursday, April 18, 2024. Bid Information and specifications may be obtained from Champeaux, Evans, Hotard Architects, 702 Dr. Michael DeBakey Drive, Lake Charles, LA 70601 or (337) 439-8871, in representation of the Beauregard Parish School Board. Bidding Documents are available at the Architect's website www.champeaux.biz free of charge to download.

A Non-Mandatory Pre-Bid Conference and site visit is scheduled for Wednesday, April 3, 2024 at 10:00 a.m. at the project site, 151 Longville Church Road, Longville, LA 70652. Attendance at the Pre-Bid Conference is not required, but is recommended for all bidders and subcontractors.

Return sealed bid to the Beauregard Parish School Board, P.O. Box 938, DeRidder, LA 70634 by certified mail, return receipt or hand deliver to Kelli Stanard, Purchasing Agent, at Beauregard Parish School Board located at 202 W 3rd Street, DeRidder, LA, by 2:00 P.M. on Thursday, April 18, 2024.

Mark bid envelope: "Sealed Bid – SOUTH BEAUREGARD HIGH SCHOOL - SEWER TREATMENT PLANT".

In compliance with La. Act 590, electronic bid submittal procedures have been established for this Proposal, and are available at Central Bidding (www.centralbidding.com). Electronic Bids may be submitted at Central Bidding (www.centralbidding.com). For questions related to the electronic bidding process, please call Central Bidding at 225-810-4814.

The Board reserves the right to reject any and all bids and to waive informalities.

Please publish: Friday, March 22, April 5, and April 12, 2024

THE BEAUREGARD PARISH SCHOOL BOARD IS AN EQUAL OPPORTUNITY AGENCY DEDICATED TO A POLICY OF NONDISCRIMINATION
REGARDING TITLE VI, THE CIVIL RIGHTS ACT OF 1964, TITLE IX, AND SECTION 504 OF THE REHABILITATION ACT OF 1973

Beauregard Parish School Board

INSTRUCTIONS TO BIDDERS

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

ARTICLE 1
DEFINITIONS

1.1 The bidding documents consist of the following:

- **Project Manual, dated March 22, 2024.**
- **Drawings, dated March 22, 2024.**
- **Addenda, issued during the bid period, to be properly acknowledged on the Bid Form.**

1.2 All definitions and provisions set forth in the General Conditions of the Contract for Construction, AIA Document A201-2007, the Beauregard Parish School Board Supplementary Conditions, or in other Contract Documents are applicable to the Bidding Documents.

1.3 Addenda are written and/or graphic instruments issued by the Architect prior to the opening of bids which modify or interpret the bidding documents by additions, deletions, clarifications, corrections, and prior approvals.

1.4 A Bid is a complete and properly signed proposal to do the work or designated portion thereof for the sums stipulated therein, supported by data called for by the Bidding Documents.

1.5 Base Bid is the sum stated in the Bid for which the Bidder offers to perform the work described as the Base, to which work may be added for sums stated in Alternate Bids.

1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or subtracted from the amount of the Base Bid if the corresponding change in project scope or materials or methods of construction described in the Bidding Documents is accepted.

1.7 A Bidder is one who submits a bid for a prime contract with the Owner for the work described in the proposed contract documents.

1.8 A Sub-Bidder is one who submits a bid to a Bidder for materials and/or labor for a portion of the work.

1.9 Where the word "Architect" is used in any of the Documents, it shall refer to the Prime Designer of the project, an Architect, an Engineer or Landscape Architect.

ARTICLE 2
BIDDER'S REPRESENTATION

2.1 Each Bidder by making his bid represents that:

2.1.1 He has read and understands the Bidding Documents and his bid is made in accordance therewith.

2.1.2 He has visited the site and has familiarized himself with local conditions under which the work is to be performed.

2.1.3 His bid is based upon the materials, systems, and equipment described in the Bidding Documents as advertised and as modified by Addenda.

2.2 The Bidder must be fully qualified under any state or local licensing law for Contractors in effect at the time and at the location of the work before submitting his bid. In the State of Louisiana, Revised Statute 37:2150 et. seq. will be considered, if applicable. Contractor shall be responsible for determining that all of his sub-bidders or prospective subcontractors are duly licensed in accordance with law.

ARTICLE 3
BIDDING DOCUMENTS

3.1 Bidding Documents

3.1.1 Bidding Documents may be obtained from the Architect, as stated in the Advertisement for Bids. Any deposit, if applicable, will be refunded as stated in the Advertisement for Bids. No deposits will be refunded on Bidding Documents returned later than ten (10) days after receipt of Bids.

3.1.2 Complete sets of Bidding Documents shall be used in preparing bids. neither the Owner nor the Architect assumes any responsibility for error, misinterpretation, or omission resulting from the use of incomplete sets of Bidding Documents.

3.1.3 The Owner or Architect, in making copies, whether printed or electronic, of the 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 permission for any other use.

3.2 Interpretation or Correction of Bidding Documents

3.2.1 Bidders shall promptly notify the Architect of any ambiguity, inconsistency or error, which they may discover upon examination of the Bidding Documents or of the site and local conditions.

3.2.2 Bidders requiring clarification or interpretation of Bidding Documents shall make a written request to the Architect to reach him at least seven (7) days prior to the date of receipt of bids.

3.2.3 Any interpretation, correction or change of the Bidding Documents will be made by Addendum. Interpretations, corrections or changes of Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections, or changes.

3.3 Substitutions

3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

3.3.2 No substitution will be considered unless written request for approval has been submitted by the Proposer and has been received by the Architect at least seven (7) days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and complete description of the proposed substitute including model numbers, drawings, cuts, performance and test data, and other information necessary for evaluation. A statement setting forth any changes in any 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 Proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

3.3.3 If the Architect approves any proposed substitute such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

3.4 Addenda

3.4.1 Addenda will be mailed or delivered to all who are known by the Architect to have received a complete set of Bidding Documents.

3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

3.4.3 Addenda shall not be issued within a period of seventy-two (72) hours prior to the advertised time for the opening of bids, excluding Saturdays, Sundays, and any legal holidays; however, if the necessity arises to issue an addendum modifying plans and specifications within theseventy-two (72) hour period prior to the advertised time for the opening of bids, then the opening of bids shall be extended no less than one (1) week, without the requirement of re-advertising. The **Beauregard Parish School Board** shall be consulted prior to the issuance of such an Addendum, and shall approve such issuance.

3.4.4 Each Bidder shall ascertain from the Architect prior to submitting his bid that he has received all Addenda issued, and he shall acknowledge their receipt on the Bid Form.

ARTICLE 4
BIDDING PROCEDURES

4.1 Form and Style of Bids

4.1.1 Bids shall be submitted onthe forms provided by the Architect.

4.1.2 All blanks on the Bid Form shall be filled in by typewriter ormanually in ink.

4.1.3 Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the written words shall govern.

4.1.4 Any interlineation, alteration or erasure must be initialed by the signer of the Bid or his authorized representative.

4.1.5 Bidders are cautioned to complete all Alternates should such be required in the Bid Form. Failure to submit alternate prices will render the Proposal informal and may cause its rejection.

4.1.6 Bidder shall make no additional stipulation on the Bid Form nor qualify his Bid in any other manner.

4.1.7 The Bid shall include the legal name of Bidder and statement whether the Bidder is a sole proprietorship, partnership, corporation, or any other legal entity and his Bid shall be signed by the person or person legally authorized to bind the Bidder to a contract. Bid submitted by an agency shall have a current Power of Attorney attached certifying the agent's authority to bind Bidder.

4.1.8 On any Bid in excess of Fifty Thousand Dollars & no cents ($50,000.00), the Contractor shall certify that he is licensed under R.S. 37:2150-2163 and show his license number on the Bid above his signature or his duly authorized representative.

4.2 Bid Security

4.2.1 No Bid shall be considered or accepted unless the bid is accompanied by bid security in an amount of not less than five percent (5%) of the Base Bid and all additive Alternates. The bid security shall be in the form of a certified check or cashier's check drawn on a bank insured by the Federal Deposit Insurance Corporation, or a bid written by a surety company licensed to do business in Louisiana and with an A.M. Best rating of "A" or better, countersigned by a person who is under contract with the surety company or bond insurer as a licensed agent in this state and who is residing in this state and accompanied by appropriate Power of Attorney in Fact or of the State of Louisiana.

Bid security furnished by the Contractor shall guarantee that the Contractor will, if awarded the work according to the terms of his proposal, enter into the Contract and furnish Performance and Payment Bonds as required by these Contract Documents, within ten (10) days after written notice that the instrument is ready for his signature.

Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as penalty.

4.2.2 The Owner will have the right to retain the Bid Security of Bidders until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all bids have been rejected.

4.3 Submission of Bid

4.3.1 Bids shall be sealed in an opaque envelope and will be received until the time specified and at the place specified in the Advertisement for Bids. It shall be the specific responsibility of the Bidder to deliver his sealed bid to the **Beauregard Parish School Board** at the appointed place, and prior to the announced time for the opening of bids. Late delivery of a bid for any reason, including late delivery by U.S. Mail or express delivery, shall disqualify the Bid. The bid envelope shall be identified on the outside with the name of the project, and the name, address and license number of the Bidder

as required by LA. R.S. 37:2163.

If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "Bid Enclosed" on the face thereof. Such bids shall be sent by Registered or Certified Mail, Return Receipt Requested, and addressed to: **Attn.: Kelli Stanard, Purchasing Agent, Beauregard Parish School Board, 202 West Third Street, DeRidder, LA 70634**.

4.3.2 Bids shall be deposited at or delivered to the designated location prior to the time and the date for receipt of bids indicated in the Advertisement for Bids, or an extension thereof made by Addendum. Bids received after the time and date for receipt of bids will be returned unopened.

4.3.3 Bidder shall assume full responsibility for timely delivery at location designated for receipt of bids.

4.3.4 Oral, telephonic or telegraphic bids or modifications to bids are invalid and will not receive consideration. Owner will not consider notation written on outside of Bid Envelope which has the effect of amending the Bid.

4.4 Modification or Withdrawal of Bid

4.4.1 A Bid may not be modified, withdrawn or cancelled by the Bidder during the time stipulated in the Advertisement for Bids, for the period following the time and bid date designated for the receipt of bids, and Bidder so agrees in submitting his bid, except in accordance with Act Ill of 1983 which states, in part, "Bids containing patently obvious mechanical, clerical or mathematical errors may be withdrawn by the Contractor, if clear and convincing sworn, written evidence of such errors is furnished to the public entity within forty-eight hours of the bid opening excluding Saturdays, Sundays and legal holidays."

4.4.2 Prior to the time and date designated for receipt of Bids, Bids submitted early may be modified or withdrawn only by notice to the party receiving bids at the place and prior to the time designated for receipt of bids.

4.4.3 Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

4.4.4 Bid Security shall be in an amount sufficient for the Bid as modified or resubmitted.

ARTICLE 5
CONSIDERATION OF BIDS

5.1 Opening of Bids

5.1.1 The properly identified bids received on time will be opened publicly and read aloud, and a tabulation abstract of the amounts of the Base Bid and Alternates, if any, will be made available to Bidders.

5.2 Rejection of Bids

5.2.1 The Owner shall have the right to reject any or all bids and in particular to reject a Bid not accompanied by any required bid security or data required by the Bidding Documents or a Bid in any way incomplete or irregular.

5.3 Acceptance of Bid

5.3.1 Any bid shall include no more than three alternates. Alternates, if accepted, shall be accepted in the order in which they are listed on 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 reserves the right to accept alternates in any order which does not affect determination of the low bidder. LA. R.S. 38:2212 (J).

5.3.2 It is the intent of the Owner to award a contract to the lowest responsible bidder in accordance with the requirements of the Bidding Documents, and if the bid does not exceed the funds available.

ARTICLE 6
POST BID INFORMATION

6.1 Proposed list of subcontractors, materials suppliers, and superintendent.

6.1.1 Within 24 hours after bids are opened, the Contractor identified as the apparent low bidder shall make the following submittals to the Architect: A tentative list of all subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to special design) proposed for principal portions of the work, as well as the proposed superintendent. Also provide a designation of the work to be performed by the Contractor with his own forces. No bids shall be received within 24 hours before a weekend or legal holiday, unless deemed necessary by the Superintendent of Schools.

It is recognized that the acceptance or rejection of alternates contained in the bid proposal may ultimately determine the low bidder on the project. In the event a Contractor, other than the Contractor identified as the apparent low bidder at the bid opening, becomes the low bidder as a result of such selection of alternates, this contractor shall make the submittals required by this section within 24 hours after notification by the Owner.

6.1.2 The Contractor will be required to establish to the satisfaction of the Architect and the Owner the reliability and responsibility of the proposed subcontractors to furnish and perform the work described in the section of the specifications pertaining to such proposed subcontractors' respective trades.

6.1.3 The architect will notify the Contractor if the Owner, after due investigation, has reasonable and substantial objection to any person or organization on the Contractor's list of proposed subcontractors. If there are objections the Contractor shall submit alternative subcontractor(s) for their approval.

6.1.4 Subcontractors and other persons and organizations proposed by the Bidder and accepted by the owner and the Architect upon the awarding of a contract must be used on the work for which they were proposed and accepted and shall not be changed except upon the recommendation of the Architect and approved by the Owner in the form of a change order. Any changes on the tentative 24 hour list submitted by the Contractor prior to the awarding of the contract must be requested in writing to the Architect with proper justification. Any change in the tentative list of subcontractors will require recommendation from the Architect to the Owner. The recommendation and approval of the Owner must be made in writing.

6.1.5 The lowest responsible bidder shall submit to the Architect and the Owner prior to award of the contract a letter from the manufacturer that the manufacturer will issue the roof system guarantee based on the specified roof system and include the name of the applicator acceptable to the manufacturer for installing the specified roof system. This manufacturer shall be one that has received prior approval or is named in the specifications.

6.2 Additional Submissions

6.2.1 A breakdown of the contract into the 32 divisions of the C.S.I., and/or as required by the Architect, Owner, Insurance Company, FEMA Consultant, other agent of the Owner, or Governmental body, shall be provided for approval by the Architect and all interested parties. No payments shall be made to the Contractor until this breakdown of costs has been received and approved by the Architect and all interested parties.

6.2.2 A copy of applicable state, parish, or municipal licenses legally required for General Contractor and subcontractors shall be provided to the Architect, for record. No payments will be made to the Contractor until received.

6.2.3 Federal and state tax identification numbers on General Contractors and subcontractors shall be provided to the Owner. No payments will be made to the Contractor until received.

ARTICLE 7
PERFORMANCE & PAYMENT BONDS

7.1 Bond Required

7.1.1 The Contractor shall furnish and pay for a Performance & Payment Bond written by a company licensed to do business in Louisiana, which shall be countersigned by a person who is contracted with the surety company or bond issuer, and who is licensed as an insurance agent of the company or issuer, and who is licensed as an insurance agent in this State, and who is residing in this State, in an amount equal to the 100% of the Contract amount. By issuing such Performance and Payment Bond, the surety acknowledges they are on the current U.S. Department of the Treasury Financial Management Service List of approved bonding companies and complies with all other provisions of R.S. 38:2219.

7.2 Time of Delivery and Form of Bond

7.2.1 The Bidder shall deliver the required bond to the Owner simultaneous with the execution of the contract.

7.2.2 Bond shall be in the form furnished by the **Beauregard Parish School Board**, entitled "Performance & Payment Bond", a copy of which is included in the Contract Documents.

7.2.3 The Bidder shall require the Attorney-In-Fact who executes the required bond on behalf of the surety to affix thereto a certified and current copy of his power of attorney.

ARTICLE 8
FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

8.1 Form to be Used

8.1.1 Form of the contract to be used shall be furnished by the **Beauregard Parish School Board**, a copy of which is bound in the Bidding Documents.

8.2 Award

8.2.1 In accordance with Louisiana Law, if the Contract is awarded to the Bidder, he shall at the time of the signing of the Contract, execute the Non- Collusion Affidavit included in the Contract Documents.

8.2.2 Before award of the contract, the successful Bidders shall furnish to the Owner a certified copy of the minutes of the corporation or partnership meeting which authorized the party executing the Bid to sign on behalf of the Contractor.

8.2.3 When a project is financed either partially or entirely with School Board bonds, the award of a contract is contingent upon the sale of bonds by the School Board. The School Board shall incur no obligation to the Contractor until the Contract between the Owner and Contractor is duly executed.

ARTICLE 9
COMPLETION TIME & LIQUIDATED DAMAGES

9.1 The completion of the contract must be as stated below, subject to such extensions as may be granted under Paragraph 8.3, Delays and Extensions of Time: in the General Conditions and the Supplementary Conditions, or the Contractor will be subject to pay to the Owner Liquidated Damages in the amount of **$500.00/day.** Time is of the essence.

9.2 Bidder acknowledges that all phases of the Project shall be Substantially Complete in **150 calendar days** from receipt of the written Notice To Proceed.

ARTICLE 10
BUILDING MATERIAL EXCLUSIONS

10.1 All building materials shall be free of asbestos.

10.2 All plumbing materials shall be free of lead.

10.3 All paints shall be free of lead.

10.4 All contractors should use the least hazardous materials on all jobs. Material Safety Data Sheets (MSDS) shall be given to the owner on all materials used.

ARTICLE 11
PRE-BID CONFERENCE

11.1 A pre-bid conference shall be held at the project site at least 10 days before the date for receipt for bids. The Architect shall coordinate the setting of the date, time and place for the pre-bid conference and shall invite in writing the Owner, and all who have received sets of the Bidding Documents to attend. The purpose of the pre-bid conference is to familiarize Bidders with the requirements of the Project and the intent of the Contract Documents, and to receive comments and information from interested Bidders.

11.2 Any revision of the Bidding Documents made as a result of the pre-bid conference shall not be valid unless included in an Addendum issued in accordance with Paragraph 3.4 of the Instructions to Bidders.

ARTICLE 12
APPLICABILITY

12.1 Any article located in the Instructions to Bidders found to be in conflict with the General Conditions and/or Supplementary Conditions will take precedence over the latter of the two set of Articles.

ARTICLE 13
FEDERALLY FUNDED PROJECTS

13.1 In addition to all other conditions contained herein, if a project is funded in whole or in part by federal funds, the following provisions are applicable:

The Contractor shall comply with the Copeland "Anti-Kickback" Act which prohibits the Contract and his assignees from inducing, by any means, any person employed in the construction, completion or repair of public work, to give up any part of the compensation to which he is otherwise entitled.

The Contractor shall comply with the Davis-Bacon Act, which requires contractors to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the U.S. Secretary of Labor. In addition, the Contractor shall be required to pay wages not less often than once a week.

The Contractor shall comply with the Contract Work Hours and Safety Standards Act, which requires the Contractor to compute the wages of every mechanic and laborer on the basis of a standard workday of eight (8) hours and standard work week of forty (40) hours. Work in excess of the standard workday or workweek is permissible

provided that the worker is compensated at a rate of not less than 1-1/2 times the basic rate of pay for all hours in excess of eight (8) hours in any calendar day or forty (40) hours in the work week. The Contractor shall not require any laborer or mechanic to work in surroundings or under work conditions which are unsanitary, hazardous or dangerous to his health and safety as determined under construction, safety and health standards promulgated by the U.S. Secretary of Labor.

For contracts in excess of $100,000, the Contractor shall comply with all applicable standards, orders or requirements issued under Section 306 of the Clean Air Act, Section 508 of the Clean Water Act Execution Order 11738 and Environmental Protection Agency (EPA) regulations which prohibit the use of facilities included on the EPA list of Violating Facilities.

The Contractor shall comply with the standards and policies relating to energy efficiency which are contained in the State energy conservation plan in compliance with the Federal Energy and Conservation Act (Public Law 94-163).

ARTICLE 14
MISCELLANEOUS PROVISIONS

14.1 The general contractor shall repair, replace or pay for the relocation of telephones and wiring, fire alarms, intercoms, bells, TV cable, security system, wiring and equipment and any other cable type installation that may be damaged, cut or removed during the construction.

14.2 The general contractor will be responsible for the removal and relocation of any playground equipment that needs to be moved due toconstruction.

14.3 The Beauregard Parish School Board is hereby recognized as a statutory employer of CONTRACTOR'S employees, including but not limited to CONTRACTOR'S direct employees, immediate employees, and statutory employees. This contract recognizes the existence of a statutory employer relationship between Beauregard Parish School Board and CONTRACTOR in accord with Act 315 of 1997.

14.4 The costs of Building Permit, Plan Review for compliance with the International Building Code, as well as Third Party Building Construction Inspection shall be included in General Contractor's Base Bid.

14.5 The costs for utilities service connections (Electrical Power, Water, Sewer, and Gas, as may be applicable to the project) shall be included in the General Contractor’s Base Bid.

ARTICLE 15
SALES AND USE TAX EXEMPTION

15.1 In accordance with applicable rules adopted and promulgated by the Louisiana Department of Revenue, the Owner shall designate the Contractor and all Subcontractors as its Agents for the purchase and lease of materials, supplies or equipment for the project. The Contractor and all Subcontractors shall accept the agency designation. The designation and acceptance thereof shall be made on the form prescribed by the Louisiana Department of Revenue which form shall be part of the Contract between the Owner, **Beauregard Parish School Board**, and the Contractor. A copy of this form is included in the Project Manual.

The Agency relationship between the Owner and the Contractor and all Subcontractors shall relieve the Contractor and Subcontractors (1) from paying any state or local sales or state or local use taxes on materials, supplies or equipment which is affixed to and/or made a part of the real estate of the project or work or which is permanently incorporated into the project or work and, (2) from paying any state or local use taxes on any materials, supplies or equipment which are leased and used exclusively for the project or work.
Accordingly, in preparing their bids and computing costs, the Contractor and Subcontractors shall not consider sales and or use taxes which would otherwise be due.

The Owner will furnish to the Contractor and Subcontractors its Certificate of Sales/Use Tax Exemption/Exclusion on the form prescribed by the Louisiana Department of Revenue. The Contractor and Subcontractors shall furnish a copy of such certificate to all vendors or suppliers of any of the materials, supplies or equipment described above,

The Contractor and Subcontractors shall make all purchases and leases on behalf of and as the Agent of the **Beauregard Parish School Board**.

Rules and regulations of the Louisiana Department of Revenue shall prevail over any conflicting provisions or specifications of the Contract.

LIST OF REQUIRED DOCUMENTS

The following items are required to be submitted as part of the Contractor's Bid:

1. Louisiana Uniform Public Works Bid Form
2. Louisiana Uniform Public works Bid Form – Unit Price Form (If applicable)
3. Bid Bond Form (with Power of Attorney attached)
4. Evidence of Corporate Authority of the person signing the Bid, in accordance with LA. R.S. 38:2212(5).

The following items are required to be submitted by the Apparent Low Bidder to the Architect or Owner within 10 days of the Bid, and prior to award of the project:

Note: The Beauregard Parish School Board requires that 6 original, signed and/or notarized copies (as is applicable) of each item listed below be submitted.

1. Resolution
2. Non-Collusion Affidavit of Prime Bidder
3. Affidavit (R.S. 38:2224, 38:2190, and 38:2290-2296, as amended)
4. Attestation Form – Past Criminal Conviction of Bidders (R.S. 38:2227)
5. Affidavit - Verification of Employees (R.S. 38:2212.10)
6. Subcontractor Listing

END OF SECTION

March 22, 2024

Beauregard Parish School Board

INSURANCE REQUIREMENTS

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

A. TYPES OF COVERAGE REQUIRED

Where applicable, any Contractor, Subcontractor, Consultant, Architect, Engineer, Other Professional or Vendor (hereinafter referred to as Contractor collectively), who performs services for the Owner in the amount of one hundred dollars or greater shall maintain the following insurance coverages with insurance companies acceptable to the Owner. Those insurance companies must be rated in the current A.M. Best Rating Guide with an "A-" rating or better. In the event that insurance requirements are included elsewhere within any other procurement documents, the requirements contained within this article shall supersede any such reference.

In connection therewith, the Contractor agrees to provide to the Owner, at the Contractor's expense and prior to any entry on the Owner's property, proof of Liability Insurance coverage, as set forth herein. The Contractor agrees to furnish to the Owner, certificates evidencing said insurance coverage for the full term of this agreement, which certificates shall name the Owner as an additional named insured on all policies except errors and omissions policies.

Each insurance policy required by this document shall be endorsed to state that coverage shall not be suspended, voided, cancelled, or altered by either party, or reduced in coverage or limits except after thirty (30) days prior written notice has been given to Owner, in compliance with the standard cancellation provisions in the Contractor's policy. The Contractor shall maintain continuous insurance coverage, without gaps or lapses in coverage.

The Contractor agrees to maintain the coverage limits and endorsements as listed herein. The Contractor's obligation to provide the required insurance will not be waived by the Contractor's failure to provide the certificate of insurance, the Owner's acceptance of a certificate of insurance showing coverage varying from the required coverage, or the Owner's allowance to commence work.

No work shall commence under any contract until the following insurance coverages are obtained by the Contractor.

(1) Worker's Compensation (Always Required)

(a) Standard Louisiana Worker's Compensation coverage (Always Required)

(i) shall cover all employees, including owners,
(ii) must be statutory for medical and indemnity
(iii) shall have minimum limits for Employer's liability of:

$1,000,000 each accident
$1,000,000 each employee – disease
$1,000,000 policy limit – disease

(b) Maritime Coverage (May be Required)

Maritime Coverage **WILL NOT** be required for this project.

Note: When specifically required by the Owner, the Contractor shall procure and maintain, during the life of this contract, a Worker's Compensation Policy specifically covering maritime activities. The scope of the project will determine whether maritime insurance is required, but if the project is going to be performed over any body of water, then this separate coverage shall be obtained.

(2) Contractor's Liability Insurance (Always Required)

Note: The term Contractor refers collectively, where applicable, to any Contractor, Subcontractor, Consultant, Architect, Engineer or Vendor performing services for the Owner.

(a) Contactor's Comprehensive General Liability
Note: "Claims Made Policies" shall not be used.

$1,000,000 per occurrence
$2,000,000 general aggregate *(Applies to the specific project, not policy)*
$2,000,000 products/completed operations aggregate
$1,000,000 personal injury and advertising coverage

Subcontractor Comprehensive General Liability
Any and all Subcontractors utilized on the project **WILL** be required to maintain the above Comprehensive General Liability Coverage limits in force throughout the duration of the project.

(b) Contractor's Automobile Liability (Owner, Non-Owned, and Hired Car)
Coverage required for Contractor Owned, Non-Owned, and Hired Car

$1,000,000 per occurrence

Subcontractor' Comprehensive Automobile Liability – Any and all Subcontractors utilized on the project **WILL** be required to maintain the above Automobile Liability Coverage limits in force throughout the duration of the project.

(c) Contractor's Umbrella Policy
Unless specifically excluded for project specific reasons, the Contractor shall procure and maintain during the life of this contract, an Umbrella Policy as follows:

$5,000,000 per occurrence
$5,000,000 general aggregate

(3) Owner's Contractor Protective Liability Policy (OCP Policy)

The Contractor shall procure and maintain, during the life of this Contract, an Owner's Contractor Protective Liability Policy (OCP) in the minimum coverage amounts as follows:

$1,000,000 per occurrence
$2,000,000 general aggregate

Note: This type of policy shall provide the Owner with separate coverage up to the limits below, as opposed to shared coverage when the Owner is only named as an additional insured on the Contractor's main policy.

(4) Property Insurance (Builder's Risk Insurance)

The Contractor **SHALL** purchase and maintain property insurance covering the work site up to the full insurable value equal to the Contract sum, and the insurance shall be endorsed to comply with any waiver of rights provisions. The property insurance shall be "All Risks Builder's Risk Completed Value Form" insurance or equivalent manuscript policy, and shall include without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft including theft of materials whether or not attached to any structure, vandalism / malicious mischief, collapse, earthquake, windstorm, false work, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any law.

The property insurance shall also contain an endorsement or specific provision to cover damages, losses and expenses incurred in the repair or replacement of any insured property (including, but not limited to charges of engineers, architects, attorneys and others). The Property insurance also shall include, by endorsement or special provision, the following additional coverage elections: operational testing (if risk is present), off premises storage not on the site or in transit and property in

transit. When required, no work may commence on the site until the Builder's Risk Insurance is obtained.

The Contractor is to provide Builder's Risk Insurance to protect the Owner, Architect, Engineer, Contractor, and any Subcontractors as to any interests that may exist. Until acceptance of work by the Owner, all work in connection with a particular contract is in the custody, charge and care of the Contractor who will take every necessary precaution against injury or damage to any part thereof whether arising from execution or from the non-execution of the work.

Contractor shall be responsible for payment of the deductible for Builder's Risk Insurance or any other property coverage deemed required to be purchased for this Contract, whether acquired by the Owner or otherwise.

(5) Flood Insurance

The Project Site **IS NOT** located within a FEMA designated Flood Zone or flood prone area.

The Contractor **WILL NOT** be required to maintain Builder's Risk for Flood related damage, in force throughout the duration of the project.

If so required, the Contractor shall purchase and maintain flood insurance covering the work site up to the full insurable value equal to the Contract sum, and the insurance shall be endorsed to comply with any waiver of rights provisions. The property insurance shall without limitation, debris removal including demolition.

(6) Errors & Omissions Policy (Professional Liability Insurance)

Note: This provision is applicable Only to Professional Services Contracts including, but not limited to, Architect, Engineer, Consultant or Other Professional Contracts, or Design/Build projects where the Professional Services are rendered as part of the Construction Contract.

Errors & Omissions Coverage **WILL NOT** be required.

This policy covers negligent acts, errors and omissions in its performance of professional services, with the following minimum policy limits:

$1,000,000 per occurrence
$1,000,000 general aggregate.

B. <u>OTHER INSURANCE REQUIREMENTS</u>

(1) <u>Additional Insured Classification and Waiver of Subrogation (Always Required)</u>

The Owner must be listed as an additional insured on all policies except for worker's compensation and professional liability insurance policies. All policies will provide a thirty-day written notice of cancellation.

Waiver of subrogation will be given to the Owner on all policies which means that the Contractor's insurer(s) will have no right of recovery or subrogation against the Owner.

The Contractor shall name the Owner as additional insured for both ongoing and completed operations on all insurance policies, except for Workers' Compensation and Professional Liability insurance, by use of the ISO endorsements CG 20 10 and 20 37, or equivalent.

Each insurance policy required by this document shall be endorsed to state that coverage shall not be suspended, voided, cancelled, or altered by either party, or reduced in coverage or limits except after thirty (30) days prior written notice has been given to Owner in compliance with the standard cancellation provisions in the Contractor's policy. The Contractor shall maintain continuous insurance coverage, without gaps or lapses in coverage.

Except for professional liability insurance, it is the intention of the parties that the insurance policy shall protect both parties and be the PRIMARY COVERAGE for any and all losses covered. Again, all policies required above shall be primary to any insurance carried by the Owner. The insurance companies shall have no recourse against the Owner for payment of any premiums or for assessments under any of the above policies.

(2) <u>Indemnification for all Contractors, Except for Architects, Engineers or Other Licensed Professionals (Always Required)</u>

The Contractor will indemnify, defend, and hold harmless the Owner, including the Owner's employees and agents, from and against any and all claims or liabilities, arising from the fault of the Contractor, its employees, subcontractors or agents in carrying out the Contractor's duties and obligations under the terms of this agreement. The Owner will indemnify, defend, and hold harmless the Contractor, including the Contractor's employees and agents, from and against any and all claims or liabilities, arising from the fault of the Owner, its employees or agents in carrying out the Owner's duties and obligations under the terms of any agreement. This section will survive the termination of any agreement. In the event that either party takes any action to enforce this mutual indemnity provision, the prevailing

party shall be entitled to recover reasonable attorney's fees and costs arising as a result thereof.

(3) Indemnification for Architects, Engineers or Other Licensed Professionals (Always Required)

The Contractor will indemnify and hold harmless the Owner, including the Owner's employees and agents, from and against any and all claims or liabilities, arising from the fault of the Contractor, its employees, subcontractors or agents in carrying out the Contractor's duties and obligations under the terms of this agreement. The Owner will indemnify and hold harmless the Contractor, including the Contractor's employees and agents, from and against any and all claims or liabilities, arising from the fault of the Owner, its employees or agents in carrying out the Owner's duties and obligations under the terms of any agreement. This section will survive the termination of any agreement. In the event that either party takes any action to enforce this mutual indemnity provision, the prevailing party shall be entitled to recover reasonable attorney's fees and costs arising as a result thereof.

(4) Statutory Employer Status (Always Required Except for Architects, Engineers or Other Licensed Professionals)

The Owner as principal, whether as the direct or statutory employer, mutually agree with the Contractor that it is their intention, and the intention of the contract between them, to recognize the Owner as the statutory employer of the Contractor's employees, whether direct or statutory, while the Contractor's employees, direct or statutory, are performing work or services with respect to this contract. It is also recognized, that the work contemplated by this contract, is a part of the trade, business or occupation of the Owner and it is an integral part of or essential to the ability of the Owner to generate its goods, products or services. It is the express intention of the Owner and the Contractor that the Owner as the statutory employer, shall, in accordance with LSA – R.S. 23:1061, be granted the exclusive remedy protections of LSA – R.S. 23:1032, and shall be liable to pay any employee employed in the execution of the work, or to his dependent, compensation which it would have been liable to pay if the employee had been immediately employed by it. In the event the Owner is required as the statutory employer to pay any workers' compensation benefits, it shall be entitled to indemnity from the Contractor for such benefits.

Attachment 1

South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board

2 C.F.R § 200.326
Federal Required and Recommended Contract Provisions

Required Contract Provisions

1. Equal Employment Opportunity

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures. authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed, and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided,* that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

2. Contract Work Hours and Safety Standards Act

Compliance with the Contract Work Hours and Safety Standards Act.

(1) *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) *Withholding for unpaid wages and liquidated damages.* The Governor's Office of Homeland Security and Emergency Preparedness (Louisiana Office of Emergency Preparedness) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

3. Clean Air Act and The Federal Water Pollution Control Act

Clean Air Act

1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
2. The contractor agrees to report each violation to the Applicant ("Beauregard Parish School Board") and understands and agrees that the Applicant will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

Federal Water Pollution Control Act

1. The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
2. The contractor agrees to report each violation to the and understands and agrees that the Applicant will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

4. Debarment and Suspension

(1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by The Applicant ("Beauregard Parish School Board"). If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to The Applicant, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

5. Byrd Anti-Lobbying Amendment

Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended)

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Required Certification. If applicable, contractors must sign and submit to the non-federal entity the following certification.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor, _____ certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap.
38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

_____
Signature of Contractor's Authorized Official

_____
Name and Title of Contractor's Authorized Official

_____
Date

6. Procurement of Recovered Materials

In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—

1. Competitively within a timeframe providing for compliance with the contract performance schedule;
2. Meeting contract performance requirements; or
3. At a reasonable price.

ii Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, https://www.epa.gov/smm/comprehensive- procurement-guideline-cpg-program

iii The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act."

Recommended Contract Provisions

1. Access to Records

Access to Records. The following access to records requirements apply to this contract:

(1) The Contractor agrees to provide The Governor's Office of Homeland Security and Emergency Preparedness (Louisiana Office of Emergency Preparedness), The Applicant (e.g. Beauregard Parish School District), the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The Contractor agrees to provide the FEMA Administrator or other work sites pertaining to the work being completed under the contract.

(4) In compliance with the Disaster Recovery Act of 2018, the Federal Administration Emergency Management ("FEMA") and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

2. **DHS Seal, Logo, and Flags**

   The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

3. **Compliance with Federal Law, Regulation, and Executive Orders**

   This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives.

4. **No Obligation by Federal Government**

   The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

5. **Program Fraud and False or Fraudulent Statements or Related Acts**

   The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: **Beauregard Parish School Board**
202 West Third Street
DeRidder, LA 70634

FOR: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

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: **Champeaux, Evans, Hotard, APAC**, and dated **March 22, 2024**.

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) for 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 – ADD – Additional Tree Removal, Brush Clearing, Debris & Fence Removal, Drainage Piping, Swale and Grading, and associated work, the South Side of the New Oxidation Pond South Fence as indicated on the Drawings, 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:

******** NOT APPLICABLE ******* Dollars ($ **** NOT APPLICABLE ****)

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

******** NOT APPLICABLE ******* Dollars ($ **** NOT APPLICABLE ****)

LOUISIANA UNIFORM PUBLIC WORK BID FORM

BID FOR:
South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board

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 FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* 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.

** **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA. R.S. 38:2212(B)(5).

BID SECURITY in the form of a Bid Bond, certified check or cashier's check, as prescribed by LA. R.S. 2218(A) attached to and made part of this bid.

Beauregard Parish School Board

BID BOND

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

Date: _____

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____ , as Principal,

and _____, as Surety,

are held and firmly bound unto the **Beauregard Parish School Board**, (Obligee), in the full and just sum of five (5%) percent of the total amount of this bid proposal, 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 and that it is listed thereon as approved for an amount equal to or greater that the amount for which it obligates itself in this instrument, that surety currently is licensed to do business in the State of Louisiana, and that this bond is countersigned by a person who is under contract with the surety as a licensed agent in this state, and who is residing in this state.

This Bid Bond shall be 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:

South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board
151 Longville Church Road
Longville, LA 70652

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.

BID FOR:
South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board

BOND CERTIFICATION: The Principal certifies that he meets all bonding requirements of the Calcasieu Parish School Board, as set forth in paragraph 4.2 of the Instructions To Bidders, found in the Project Manual, Front End Documents for the Beauregard Parish School Board.

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

****

THIS FORM AND APPROPRIATE POWER OF ATTORNEY
SHALL BE ATTACHED TO PROPOSAL AND BID WHEN SUBMITTED

****

Beauregard Parish School Board

RESOLUTION

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

BE IT RESOLVED that _____,

Officer / Owner of _____

is hereby authorized to sign any Contract or document on behalf of

_____

_____

_____
Officer/Owner

_____
Signature Officer/Owner

SWORN TO AND SUBSCRIBED before me this _____ day of _____, 2023,

in _____, Louisiana.

_____
Notary Public

My Commission Expires _____

****

THIS FORM SHALL BE SUBMITTED TO THE BEAUREGARD PARISH SCHOOL BOARD, OR THE PROJECT ARCHITECT/ENGINEER, ON BEHALF OF THE BEAUREGARD PARISH SCHOOL BOARD, WITHIN TEN (10) DAYS AFTER THE BID OPENING

****

Beauregard Parish School Board

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

_____, being first duly sworn, deposed and says that

(1) He is _____ of _____, the Bidder that has submitted the above referenced Bid:

(2) He is fully informed respecting the preparations and contents of the attached Bid and of all pertinent circumstances respecting such Bid:

(3) Such 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, has 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 for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communications or conference with any other Bidder or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through the collusion, conspiracy, connivance or unlawful agreement any advantage against the **Beauregard Parish School Board**, or any person interested in the proposed Contract; and

(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 of its agents, representatives, owners, employees or parties in interest, including this affiant.

Company Name: _____

By: _____

_____

Title: _____

BID FOR:
South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board

SWORN TO AND SUBSCRIBED before me on this ____ day of _____, 20____.

_____

_____
NOTARY PUBLIC

My Commission Expires: _____

****

THIS FORM SHALL BE SUBMITTED TO THE BEAUREGARD PARISH SCHOOL BOARD, OR THE PROJECT ARCHITECT/ENGINEER, ON BEHALF OF THE BEAUREGARD PARISH SCHOOL BOARD, WITHIN TEN (10) DAYS AFTER THE BID OPENING

****

Beauregard Parish School Board

AFFIDAVIT

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

Before me, the undersigned authority, duly commissioned and qualified within and for the State and the Parish aforesaid, personally came and appeared _____, representing _____, who, being by me first duly sworn deposed and said that he has read this affidavit and does hereby agree under oath to comply with all provisions herein as follows:

PART I

Section 2224 of Part I of Chapter 10 of Title 38
of the LA. Revised Statutes of 1950 as amended.

(1) That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant 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 affiant; and

(2) That no part of the contract price received by affiant as 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 the affiant whose services in connection with the construction of the public building or project were in the regular course of their duties for affiant.

PART II

Section 2190 of the Part I of Chapter 10 of Title 38
of the LA. Revised Statutes of 1950 as amended.

That affiant, if he be an architect or engineer, or representative thereof, does not own a substantial financial interest, either directly or indirectly, in any corporation, firm partnership, or other organization which supplies materials for the construction of a public building or project when the architect or engineer has performed architectural or engineering services, either directly or indirectly, in connection with the public building or project for which the materials are being supplied.

AFFIDAVIT
LA R.S. Section 2224, 2190, & 2290-2296

BID FOR:
South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board

For the purpose of this section, a "substantial financial interest" shall exclude any interest in stock being traded on the American Stock Exchange or the New York Stock Exchange.

That affiant, if subject to the provisions of this section, does hereby agree to be subject to the penalties involved for the violation of this section.

PART III

That affiant does hereby state that he has read and agrees to comply with and be subject to the provisions of Part V of Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950, being Sections 2290 through 2296 of Title 38 as amended.

Company Name: _____

By: _____

_____

Title: _____

SWORN TO AND SUBSCRIBED before me on this _____ day of _____, 20____.

_____

_____
NOTARY PUBLIC

My Commission Expires: _____

****

THIS FORM SHALL BE SUBMITTED TO THE BEAUREGARD PARISH SCHOOL BOARD, OR THE PROJECT ARCHITECT/ENGINEER, ON BEHALF OF THE BEAUREGARD PARISH SCHOOL BOARD, WITHIN TEN (10) DAYS AFTER THE BID OPENING

****

Beauregard Parish School Board

ATTESTATION

PAST CRIMINAL CONVICTION OF BIDDERS
R.S. 38:2227

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

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 (R.S. 14:118)
   (b) Corrupt influencing (R.S. 14:120)
   (c) Extortion (R.S. 14:66)
   (d) Money laundering (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 (R.S. 14:67)
   (b) Identity Theft (R.S. 14:67.16)
   (c) Theft of a business record (R.S.14:67.20)
   (d) False accounting (R.S. 14:70)
   (e) Issuing worthless checks (R.S. 14:71)
   (f) Bank fraud (R.S. 14:71.1)
   (g) Forgery (R.S. 14:72)
   (h) Contractors; misapplication of payments (R.S. 14:202)
   (i) Malfeasance in office (R.S. 14:134)

ATTESTATION FORM
Past Criminal Convictions of Bidders, R.S. 38:2227

BID FOR:
South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board

_____	_____
NAME OF BIDDER	**NAME OF AUTHORIZED SIGNATORY OF BIDDER**
_____	_____
DATE	**TITLE OF AUTHORIZED SIGNATORY OF BIDDER**

_____
SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER

****

THIS FORM SHALL BE SUBMITTED TO THE BEAUREGARD PARISH SCHOOL BOARD, OR THE PROJECT ARCHITECT/ENGINEER, ON BEHALF OF THE BEAUREGARD PARISH SCHOOL BOARD, WITHIN TEN (10) DAYS AFTER THE BID OPENING

****

Beauregard Parish School Board

AFFIDAVIT

VERIFICATION OF EMPLOYEES (E-VERIFY)
R.S. 38:2212.10(c)

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

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

In accordance with the requirements of LA R.S. 38:2212.10:

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

B. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verification system (E-Verify) to verify the legal status of all new employees in the state of Louisiana.

C. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

_____	_____
NAME OF BIDDER	**NAME OF AUTHORIZED SIGNATORY OF BIDDER**
_____	_____
DATE	**TITLE OF AUTHORIZED SIGNATORY OF BIDDER**

_____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER

****

THIS FORM SHALL BE SUBMITTED TO THE BEAUREGARD PARISH SCHOOL BOARD, OR THE PROJECT ARCHITECT/ENGINEER, ON BEHALF OF THE BEAUREGARD PARISH SCHOOL BOARD, WITHIN TEN (10) DAYS AFTER THE BID OPENING

****

Beauregard Parish School Board

Subcontractor Approval List

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

Beauregard Parish School Board – Project No. ####
Champeaux Evans Hotard, APAC - Project No. 2300

WORK DESCRIPTION	SUBCONTRACTOR	LICENSE NUMBER	FED. I.D. NUMBER

Attach additional pages as necessary

DRAFT

AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor

where the basis of payment is a Stipulated Sum

AGREEMENT made as of the *** TBD *** day of *** TBD *** in the year 2024

BETWEEN the Owner:
Beauregard Parish School Board
202 W. Third Street
DeRidder, LA 70634

and the Contractor:

***** To Be Determined *****
***** To Be Determined *****
***** To Be Determined *****
Louisiana Contractors License No. *** TBD ***

for the following Project:

South Beauregard High School
Sewer Treatment Plant
for the Beauregard Parish School Board

151 Longville Church Road
Longville, LA 70652

The Architect:

Champeaux Evans Hotard, APAC
702 Dr. Michael DeBakey Drive
Lake Charles, LA 70601

The Owner and Contractor agree as follows:

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ATTACHMENT 1 – 2 C.F.R. § 200.326 "FEDERAL REQUIRED AND RECOMMENDED CONTRACT PROVISIONS"

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[ ] The date of this Agreement.

[**X**] A date set forth in a notice to proceed issued by the Owner.

[ ] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)
< Not Applicable >

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

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User Notes: (1162688578)

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[**X**] Not later than **150** (**One Hundred Fifty**) calendar days from the date of commencement of the Work.

[ ] By the following date: *< Not Applicable >*

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
< Not Applicable >	*< Not Applicable >*

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be ********* To Be Determined ****** Cents ($ *** TBD ******),** subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
< Not Applicable >	*< Not Applicable >*

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.

(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
< Not Applicable >	*< Not Applicable >*	*< Not Applicable >*

§ 4.3 Allowances, if any, included in the Contract Sum:

(Identify each allowance.)

Item	Price

§ 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

Five Hundred Dollars and No/100 ($500.00) per Calendar Day

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§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract S

< Not Applicable >

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

< As Stated Above >

§ 5.1.3 The Contractor shall submit a Draft Application For Payment to the Architect not later than Seven (7) days prior to the last day of the month. The Architect shall review the Draft Application for Payment, and shall either: (1) approve the Application as submitted, or (2) request that the Contractor make revisions to the Application, and resubmit accordingly.

Provided that an Approved Application for Payment is received by the Architect not later than the last day of a month, the Owner shall make payment of the amount certified to the Contractor not later than Thirty (30) Days after approval by the Architect. If an Approved Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than Thirty (30) days after approval by the Architect.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2007, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- **.3** That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2007;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

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.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2007; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)Five Percent (5.0%) on Work Completed + five Percent (5.0%) on Materials Stored on site, as stipulated by La. Revised Statutes.

§ 5.1.7.1.1 The following items are not subject to retainage:.

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

< Not Applicable >

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

< Not Applicable>

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage upon Substantial Completion.)

< Not Applicable>

§ 5.1.8 *(Paragraph deleted)*

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

< As Stated Above >

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

< As Stated Above >

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ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

< As Stated Above >

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[X] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[ ] Litigation in a court of competent jurisdiction

[ ] Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.1.1

(Paragraoh deleted)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

Larry Hollie, Superintendent
Beauregard Parish School Board
202 W. Third Street
DeRidder, LA 70634
Larry Hollie <lhollie@beau.k12.la.us>

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)
***** TBD *****

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

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§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2007, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

< Not Applicable >

§ 8.7 Other provisions:

All items, provisions, and documents included in the Project Manual shall be made a part of the Contract, as if originally included therein.

Attachment 1 – 2 C.F.R. § 200.326 "Federal Required and Recommended Contract Provisions" shall be attached to the Contract as "Attachment 1", and all required and recommended provisions included therein shall become a requirement of the Contract, as if originally include therein.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A201™–2007, General Conditions of the Contract for Construction

.3 Beauregard Parish School Board Supplementary Conditions

.4 Drawings

Number	Title	Date
CONSTRUCTION DOCUMENTS	South Beauregard High School - Sewer Treatment Plant for the Beauregard Parish School Board	March 22, 2024

.5 Specifications

Section	Title	Date	Pages
PROJECT MANUAL (including all Bidding Requirements, General Conditions, Supplementary Conditions, Documents, Forms, and Technical Specification Sections included therein).	South Beauregard High School - Sewer Treatment Plant for the Beauregard Parish School Board	March 22, 2024	### Pages

.6 Addenda, if any:

Number	Date	Pages
Addendum No.##	***** TBD *****	***** TBD *****

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Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.7 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)[ ] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:

(Insert the date of the E204-2017 incorporated into this Agreement.)

< Not Applicable >

[ ] The Sustainability Plan:

Title	Date	Pages
< Not Applicable >		

[X] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
All Documents included in the Project Manual and all items and provisions included in the Addenda shall be incorporated as part of the Contract Documents. Attachment 1 – 2 C.F.R. § 200.326 "Federal Required and Recommended Contract Provisions"			

.8 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2007 provides that bidding documents, such as the Advertisement or Invitation to Bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

All Documents included in the Project Manual and all items and provisions included in the Addenda shall be incorporated as part of the Contract Documents. The Contractor's attention is specifically called to the following attachment, and all items, both Required and Recommended shall be made part of the Contract, by inclusion and reference:

Attachment 1 – 2 C.F.R. § 200.326 "Federal Required and Recommended Contract Provisions"

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*

CONTRACTOR *(Signature)*

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Cynthia LaFitte, President Beauregard Parish School Board	***** To Be Determined ***** ***** To Be Determined *****
(Printed name and title)	*(Printed name and title)*

DRAFT

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Beauregard Parish School Board

PERFORMANCE AND PAYMENT BOND

PROJECT NAME: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

LOCATION: **South Beauregard High School**
151 Longville Church Road
Longville, LA 70652

To these presents personally came and intervened _____, herein acting for _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business in the State of Louisiana, as surety, who declared that having taken cognizance of this contract and of the Construction Documents mentioned herein, he hereby in his capacity as its Attorney-In-Fact obligates his said company, as Surety for the said Contractor, unto the said Owner, **Beauregard Parish School Board**, up to the sum of:

_____ ($_____) DOLLARS.

The condition of this Performance and Payment Bond shall be that should the Contractor herein not perform the Contract in accordance with the terms and conditions hereof, or should said Contractor not fully indemnify and save harmless the Owner, **Beauregard Parish School Board**, from all costs and damages which he may suffer by said Contractor's non-performance, or should said Contractor not pay all persons who have and fulfill obligations to perform labor and/or furnish materials in the prosecution of the work provided for herein, including by way of example: workmen, laborers, mechanics, and furnishers of materials, machinery, equipment, and fixtures, then said Surety agrees and is bound to so perform the Contract, and make said payment(s).

Provided, that any alterations which may be made in the terms, of the Contract or in the work to be done under it, or the giving by the Owner, **Beauregard Parish School Board**, of any extensions of time for the performance of the Contract, or any other forbearance on the part of either the Owner, **Beauregard Parish School Board**, or the Contractor to the other shall not in any way release the Contractor or the Surety from their liability hereunder, notice to the Surety of any such alterations, extensions, or other forbearance being hereby waived.

IN WITNESS WHEREOF, the parties herein on this _____ day of _____, 20___, have executed this agreement in six (6) counterparts, each of which shall, without proof of accountancy for the other counterparts, be deemed an original thereof.

WITNESSES: As to Principal

_____ _____
COMPANY

_____ _____
(Principal)

_____
(Signature)

WITNESSES: As to Surety

_____ _____
SURETY

_____

_____ _____
(Attorney-In-Fact)

_____

DRAFT

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
«DRAFT»
« »

THE OWNER:
(Name, legal status and address)
« »« »
« »

THE ARCHITECT:
(Name, legal status and address)
« »« »
« »

TABLE OF ARTICLES

1 GENERAL PROVISIONS

2 OWNER

3 CONTRACTOR

4 ARCHITECT

5 SUBCONTRACTORS

6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

7 CHANGES IN THE WORK

8 TIME

9 PAYMENTS AND COMPLETION

10 PROTECTION OF PERSONS AND PROPERTY

11 INSURANCE AND BONDS

12 UNCOVERING AND CORRECTION OF WORK

13 MISCELLANEOUS PROVISIONS

14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

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INDEX
(Topics and numbers in bold are section headings.)

Acceptance of Nonconforming Work
9.6.6, 9.9.3, **12.3**
Acceptance of Work
9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3
Access to Work
3.16, 6.2.1, 12.1
Accident Prevention
10
Acts and Omissions
3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.4.2, 13.7, 14.1, 15.2
Addenda
1.1.1, 3.11.1
Additional Costs, Claims for
3.7.4, 3.7.5, 6.1.1, 7.3.7.5, 10.3, 15.1.4
Additional Inspections and Testing
9.4.2, 9.8.3, 12.2.1, **13.5**
Additional Insured
11.1.4
Additional Time, Claims for
3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.5**
Administration of the Contract
3.1.3, **4.2**, 9.4, 9.5
Advertisement or Invitation to Bid
1.1.1
Aesthetic Effect
4.2.13
Allowances
3.8, 7.3.8
All-risk Insurance
11.3.1, 11.3.1.1
Applications for Payment
4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.6.3, 9.7, 9.10, 11.1.3
Approvals
2.1.1, 2.2.2, 2.4, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10, 4.2.7, 9.3.2, 13.5.1
Arbitration
8.3.1, 11.3.10, 13.1.1, 15.3.2, **15.4**
ARCHITECT
4
Architect, Definition of
4.1.1
Architect, Extent of Authority
2.4.1, 3.12.7, 4.1, 4.2, 5.2, 6.3, 7.1.2, 7.3.7, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.5.1, 13.5.2, 14.2.2, 14.2.4, 15.1.3, 15.2.1
Architect, Limitations of Authority and Responsibility
2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.3, 9.6.4, 15.1.3, 15.2
Architect's Additional Services and Expenses
2.4.1, 11.3.1.1, 12.2.1, 13.5.2, 13.5.3, 14.2.4
Architect's Administration of the Contract
3.1.3, 4.2, 3.7.4, 15.2, 9.4.1, 9.5
Architect's Approvals
2.4.1, 3.1.3, 3.5, 3.10.2, 4.2.7
Architect's Authority to Reject Work
3.5, 4.2.6, 12.1.2, 12.2.1
Architect's Copyright
1.1.7, 1.5
Architect's Decisions
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.5.2, 15.2, 15.3
Architect's Inspections
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.5
Architect's Instructions
3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.5.2
Architect's Interpretations
4.2.11, 4.2.12
Architect's Project Representative
4.2.10
Architect's Relationship with Contractor
1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.4.2, 13.5, 15.2
Architect's Relationship with Subcontractors
1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3.7
Architect's Representations
9.4.2, 9.5.1, 9.10.1
Architect's Site Visits
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5
Asbestos
10.3.1
Attorneys' Fees
3.18.1, 9.10.2, 10.3.3
Award of Separate Contracts
6.1.1, 6.1.2
Award of Subcontracts and Other Contracts for Portions of the Work
5.2
Basic Definitions
1.1
Bidding Requirements
1.1.1, 5.2.1, 11.4.1
Binding Dispute Resolution
9.7, 11.3.9, 11.3.10, 13.1.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.4.1
Boiler and Machinery Insurance
11.3.2
Bonds, Lien
7.3.7.4, 9.10.2, 9.10.3
Bonds, Performance, and Payment
7.3.7.4, 9.6.7, 9.10.3, 11.3.9, **11.4**

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User Notes: (1500660560)

Building Permit
3.7.1
Capitalization
1.3
Certificate of Substantial Completion
9.8.3, 9.8.4, 9.8.5
Certificates for Payment
4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.3
Certificates of Inspection, Testing or Approval
13.5.4
Certificates of Insurance
9.10.2, 11.1.3
Change Orders
1.1.1, 2.4.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11.1, 3.12.8, 4.2.8, 5.2.3, 7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.6, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.3.1.2, 11.3.4, 11.3.9, 12.1.2, 15.1.3
Change Orders, Definition of
7.2.1
CHANGES IN THE WORK
2.2.1, 3.11, 4.2.8, **7**, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1, 11.3.9
Claims, Definition of
15.1.1
CLAIMS AND DISPUTES
3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**, 15.4
Claims and Timely Assertion of Claims
15.4.1
Claims for Additional Cost
3.2.4, 3.7.4, 6.1.1, 7.3.9, 10.3.2, **15.1.4**
Claims for Additional Time
3.2.4, 3.7.46.1.1, 8.3.2, 10.3.2, **15.1.5**
Concealed or Unknown Conditions, Claims for
3.7.4
Claims for Damages
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1, 11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6
Claims Subject to Arbitration
15.3.1, 15.4.1
Cleaning Up
3.15, 6.3
Commencement of the Work, Conditions Relating to
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3, 6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.3.1, 11.3.6, 11.4.1, 15.1.4
Commencement of the Work, Definition of
8.1.2
Communications Facilitating Contract Administration
3.9.1, **4.2.4**
Completion, Conditions Relating to
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1, 9.10, 12.2, 13.7, 14.1.2
COMPLETION, PAYMENTS AND
9
Completion, Substantial
4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 13.7
Compliance with Laws
1.6.1, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 10.2.2, 11.1, 11.3, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14.1.1, 14.2.1.3, 15.2.8, 15.4.2, 15.4.3
Concealed or Unknown Conditions
3.7.4, 4.2.8, 8.3.1, 10.3
Conditions of the Contract
1.1.1, 6.1.1, 6.1.4
Consent, Written
3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 11.3.1, 13.2, 13.4.2, 15.4.4.2
Consolidation or Joinder
15.4.4
CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
1.1.4, **6**
Construction Change Directive, Definition of
7.3.1
Construction Change Directives
1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, **7.3**, 9.3.1.1
Construction Schedules, Contractor's
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2
Contingent Assignment of Subcontracts
5.4, 14.2.2.2
Continuing Contract Performance
15.1.3
Contract, Definition of
1.1.2
CONTRACT, TERMINATION OR SUSPENSION OF THE
5.4.1.1, 11.3.9, **14**
Contract Administration
3.1.3, 4, 9.4, 9.5
Contract Award and Execution, Conditions Relating to
3.7.1, 3.10, 5.2, 6.1, 11.1.3, 11.3.6, 11.4.1
Contract Documents, Copies Furnished and Use of
1.5.2, 2.2.5, 5.3
Contract Documents, Definition of
1.1.1
Contract Sum
3.7.4, 3.8, 5.2.3, 7.2, 7.3, 7.4, **9.1**, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.3.1, 14.2.4, 14.3.2, 15.1.4, 15.2.5
Contract Sum, Definition of
9.1
Contract Time
3.7.4, 3.7.5, 3.10.2, 5.2.3, 7.2.1.3, 7.3.1, 7.3.5, 7.4, 8.1.1, 8.2.1, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 14.3.2, 15.1.5.1, 15.2.5
Contract Time, Definition of
8.1.1

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User Notes: (1500660560)

CONTRACTOR
3
Contractor, Definition of
3.1, 6.1.2
Contractor's Construction Schedules
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2
Contractor's Employees
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1
Contractor's Liability Insurance
11.1
Contractor's Relationship with Separate Contractors and Owner's Forces
3.12.5, 3.14.2, 4.2.4, 6, 11.3.7, 12.1.2, 12.2.4
Contractor's Relationship with Subcontractors
1.2.2, 3.3.2, 3.18.1, 3.18.2, 5, 9.6.2, 9.6.7, 9.10.2, 11.3.1.2, 11.3.7, 11.3.8
Contractor's Relationship with the Architect
1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.5, 15.1.2, 15.2.1
Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2
Contractor's Responsibility for Those Performing the Work
3.3.2, 3.18, 5.3.1, 6.1.3, 6.2, 9.5.1, 10.2.8
Contractor's Review of Contract Documents
3.2
Contractor's Right to Stop the Work
9.7
Contractor's Right to Terminate the Contract
14.1, 15.1.6
Contractor's Submittals
3.10, 3.11, 3.12.4, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3, 11.1.3, 11.4.2
Contractor's Superintendent
3.9, 10.2.6
Contractor's Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.5, 7.3.7, 8.2, 10, 12, 14, 15.1.3
Contractual Liability Insurance
11.1.1.8, 11.2
Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1
Copies Furnished of Drawings and Specifications
1.5, 2.2.5, 3.11
Copyrights
1.5, **3.17**
Correction of Work
2.3, 2.4, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**
Correlation and Intent of the Contract Documents
1.2
Cost, Definition of
7.3.7
Costs
2.4.1, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.7, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.3, 12.1.2, 12.2.1, 12.2.4, 13.5, 14
Cutting and Patching
3.14, 6.2.5
Damage to Construction of Owner or Separate Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 11.1.1, 11.3, 12.2.4
Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4.1, 11.3.1, 12.2.4
Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1, 11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6
Damages for Delay
6.1.1, 8.3.3, 9.5.1.6, 9.7, 10.3.2
Date of Commencement of the Work, Definition of
8.1.2
Date of Substantial Completion, Definition of
8.1.3
Day, Definition of
8.1.4
Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 15.2, 6.3, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.5.2, 14.2.2, 14.2.4, 15.1, 15.2
Decisions to Withhold Certification
9.4.1, **9.5**, 9.7, 14.1.1.3
Defective or Nonconforming Work, Acceptance, Rejection and Correction of
2.3.1, 2.4.1, 3.5, 4.2.6, 6.2.5, 9.5.1, 9.5.2, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1
Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 15.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1
Delays and Extensions of Time
3.2, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7, 10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5
Disputes
6.3, 7.3.9, 15.1, 15.2
Documents and Samples at the Site
3.11
Drawings, Definition of
1.1.5
Drawings and Specifications, Use and Ownership of
3.11
Effective Date of Insurance
8.2.2, 11.1.2
Emergencies
10.4, 14.1.1.2, 15.1.4
Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1

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User Notes: (1500660560)

Equipment, Labor, Materials or
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13.1, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.2.3, 2.2.5, 3.1, 3.3.1, 3.4.1, 3.5, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.5, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.2, 14.2, 14.3.1, 15.1.3
Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2, 10.4.1, 14.3, 15.1.5, 15.2.5
Failure of Payment
9.5.1.3, **9.7**, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2
Faulty Work
(See Defective or Nonconforming Work)
Final Completion and Final Payment
4.2.1, 4.2.9, 9.8.2, **9.10**, 11.1.2, 11.1.3, 11.3.1, 11.3.5, 12.3.1, 14.2.4, 14.4.3
Financial Arrangements, Owner's
2.2.1, 13.2.2, 14.1.1.4
Fire and Extended Coverage Insurance
11.3.1.1
GENERAL PROVISIONS
1
Governing Law
13.1
Guarantees (See Warranty)
Hazardous Materials
10.2.4, **10.3**
Identification of Subcontractors and Suppliers
5.2.1
Indemnification
3.17, **3.18**, 9.10.2, 10.3.3, 10.3.5, 10.3.6, 11.3.1.2, 11.3.7
Information and Services Required of the Owner
2.1.2, **2.2**, 3.2.2, 3.12.4, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.4, 13.5.1, 13.5.2, 14.1.1.4, 14.1.4, 15.1.3
Initial Decision
15.2
Initial Decision Maker, Definition of
1.1.8
Initial Decision Maker, Decisions
14.2.2, 14.2.4, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
Initial Decision Maker, Extent of Authority
14.2.2, 14.2.4, 15.1.3, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
Injury or Damage to Person or Property
10.2.8, 10.4.1
Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 12.2.1, 13.5
Instructions to Bidders
1.1.1
Instructions to the Contractor
3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.5.2
Instruments of Service, Definition of
1.1.7
Insurance
3.18.1, 6.1.1, 7.3.7, 9.3.2, 9.8.4, 9.9.1, 9.10.2, **11**
Insurance, Boiler and Machinery
11.3.2
Insurance, Contractor's Liability
11.1
Insurance, Effective Date of
8.2.2, 11.1.2
Insurance, Loss of Use
11.3.3
Insurance, Owner's Liability
11.2
Insurance, Property
10.2.5, **11.3**
Insurance, Stored Materials
9.3.2
INSURANCE AND BONDS
11
Insurance Companies, Consent to Partial Occupancy
9.9.1
Intent of the Contract Documents
1.2.1, 4.2.7, 4.2.12, 4.2.13, 7.4
Interest
13.6
Interpretation
1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1
Interpretations, Written
4.2.11, 4.2.12, 15.1.4
Judgment on Final Award
15.4.2
Labor and Materials, Equipment
1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Labor Disputes
8.3.1
Laws and Regulations
1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13.1, 4.1.1, 9.6.4, 9.9.1, 10.2.2, 11.1.1, 11.3, 13.1.1, 13.4, 13.5.1, 13.5.2, 13.6.1, 14, 15.2.8, 15.4
Liens
2.1.2, 9.3.3, 9.10.2, 9.10.4, 15.2.8
Limitations, Statutes of
12.2.5, 13.7, 15.4.1.1
Limitations of Liability
2.3.1, 3.2.2, 3.5, 3.12.10, 3.17, 3.18.1, 4.2.6, 4.2.7, 4.2.12, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 10.2.5, 10.3.3, 11.1.2, 11.2, 11.3.7, 12.2.5, 13.4.2
Limitations of Time
2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7, 5.2, 5.3.1, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 11.3.1.5, 11.3.6, 11.3.10, 12.2, 13.5, 13.7, 14, 15
Loss of Use Insurance
11.3.3

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Material Suppliers
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.6, 9.10.5
Materials, Hazardous
10.2.4, **10.3**
Materials, Labor, Equipment and
1.1.3, 1.1.6, 1.5.1, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12,
3.13.1, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2,
9.3.3, 9.5.1.3, 9.10.2, 10.2.1.2, 10.2.4, 14.2.1.1,
14.2.1.2
Means, Methods, Techniques, Sequences and
Procedures of Construction
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2
Mechanic's Lien
2.1.2, 15.2.8
Mediation
8.3.1, 10.3.5, 10.3.6, 15.2.1, 15.2.5, 15.2.6, **15.3**,
15.4.1
Minor Changes in the Work
1.1.1, 3.12.8, 4.2.8, 7.1, **7.4**
MISCELLANEOUS PROVISIONS
13
Modifications, Definition of
1.1.1
Modifications to the Contract
1.1.1, 1.1.2, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7,
10.3.2, 11.3.1
Mutual Responsibility
6.2
Nonconforming Work, Acceptance of
9.6.6, 9.9.3, **12.3**
Nonconforming Work, Rejection and Correction of
2.3.1, 2.4.1, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3,
9.10.4, 12.2.1
Notice
2.2.1, 2.3.1, 2.4.1, 3.2.4, 3.3.1, 3.7.2, 3.12.9, 5.2.1,
9.7, 9.10, 10.2.2, 11.1.3, 12.2.2.1, 13.3, 13.5.1,
13.5.2, 14.1, 14.2, 15.2.8, 15.4.1
Notice, Written
2.3.1, 2.4.1, 3.3.1, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 9.7,
9.10, 10.2.2, 10.3, 11.1.3, 11.3.6, 12.2.2.1, **13.3**, 14,
15.2.8, 15.4.1
Notice of Claims
3.7.4, 10.2.8, **15.1.2**, 15.4
Notice of Testing and Inspections
13.5.1, 13.5.2
Observations, Contractor's
3.2, 3.7.4
Occupancy
2.2.2, 9.6.6, 9.8, 11.3.1.5
Orders, Written
1.1.1, 2.3, 3.9.2, 7, 8.2.2, 11.3.9, 12.1, 12.2.2.1,
13.5.2, 14.3.1
OWNER
2
Owner, Definition of
2.1.1
Owner, Information and Services Required of the
2.1.2, **2.2**, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2,
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.3, 13.5.1,
13.5.2, 14.1.1.4, 14.1.4, 15.1.3
Owner's Authority
1.5, 2.1.1, 2.3.1, 2.4.1, 3.4.2, 3.8.1, 3.12.10, 3.14.2,
4.1.2, 4.1.3, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3,
7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.1, 9.3.2, 9.5.1, 9.6.4,
9.9.1, 9.10.2, 10.3.2, 11.1.3, 11.3.3, 11.3.10, 12.2.2,
12.3.1, 13.2.2, 14.3, 14.4, 15.2.7
Owner's Financial Capability
2.2.1, 13.2.2, 14.1.1.4
Owner's Liability Insurance
11.2
Owner's Relationship with Subcontractors
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2
Owner's Right to Carry Out the Work
2.4, 14.2.2
Owner's Right to Clean Up
6.3
Owner's Right to Perform Construction and to
Award Separate Contracts
6.1
Owner's Right to Stop the Work
2.3
Owner's Right to Suspend the Work
14.3
Owner's Right to Terminate the Contract
14.2
Ownership and Use of Drawings, Specifications
and Other Instruments of Service
1.1.1, 1.1.6, 1.1.7, **1.5**, 2.2.5, 3.2.2, 3.11.1, 3.17,
4.2.12, 5.3.1
Partial Occupancy or Use
9.6.6, **9.9**, 11.3.1.5
Patching, Cutting and
3.14, 6.2.5
Patents
3.17
Payment, Applications for
4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1,
14.2.3, 14.2.4, 14.4.3
Payment, Certificates for
4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1,
9.10.3, 13.7, 14.1.1.3, 14.2.4
Payment, Failure of
9.5.1.3, **9.7**, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2
Payment, Final
4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.4.1, 12.3.1,
13.7, 14.2.4, 14.4.3
Payment Bond, Performance Bond and
7.3.7.4, 9.6.7, 9.10.3, **11.4**
Payments, Progress
9.3, **9.6**, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3
PAYMENTS AND COMPLETION
9

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Payments to Subcontractors
5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2
PCB
10.3.1
Performance Bond and Payment Bond
7.3.7.4, 9.6.7, 9.10.3, **11.4**
Permits, Fees, Notices and Compliance with Laws
2.2.2, **3.7**, 3.13, 7.3.7.4, 10.2.2
PERSONS AND PROPERTY, PROTECTION OF
10
Polychlorinated Biphenyl
10.3.1
Product Data, Definition of
3.12.2
Product Data and Samples, Shop Drawings
3.11, **3.12**, 4.2.7
Progress and Completion
4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.3
Progress Payments
9.3, **9.6**, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3
Project, Definition of
1.1.4
Project Representatives
4.2.10
Property Insurance
10.2.5, **11.3**
PROTECTION OF PERSONS AND PROPERTY
10
Regulations and Laws
1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 9.9.1, 10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14, 15.2.8, 15.4
Rejection of Work
3.5, 4.2.6, 12.2.1
Releases and Waivers of Liens
9.10.2
Representations
3.2.1, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.8.2, 9.10.1
Representatives
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.1, 4.2.2, 4.2.10, 5.1.1, 5.1.2, 13.2.1
Responsibility for Those Performing the Work
3.3.2, 3.18, 4.2.3, 5.3.1, 6.1.3, 6.2, 6.3, 9.5.1, 10
Retainage
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field Conditions by Contractor
3.2, 3.12.7, 6.1.3
Review of Contractor's Submittals by Owner and Architect
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
Review of Shop Drawings, Product Data and Samples by Contractor
3.12
Rights and Remedies
1.1.2, 2.3, 2.4, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.2, 12.2.4, **13.4**, 14, 15.4
Royalties, Patents and Copyrights
3.17
Rules and Notices for Arbitration
15.4.1
Safety of Persons and Property
10.2, 10.4
Safety Precautions and Programs
3.3.1, 4.2.2, 4.2.7, 5.3.1, **10.1**, 10.2, 10.4
Samples, Definition of
3.12.3
Samples, Shop Drawings, Product Data and
3.11, **3.12**, 4.2.7
Samples at the Site, Documents and
3.11
Schedule of Values
9.2, 9.3.1
Schedules, Construction
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2
Separate Contracts and Contractors
1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
Shop Drawings, Definition of
3.12.1
Shop Drawings, Product Data and Samples
3.11, **3.12**, 4.2.7
Site, Use of
3.13, 6.1.1, 6.2.1
Site Inspections
3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.4.2, 9.10.1, 13.5
Site Visits, Architect's
3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5
Special Inspections and Testing
4.2.6, 12.2.1, 13.5
Specifications, Definition of
1.1.6
Specifications
1.1.1, **1.1.6**, 1.2.2, 1.5, 3.11, 3.12.10, 3.17, 4.2.14
Statute of Limitations
13.7, 15.4.1.1
Stopping the Work
2.3, 9.7, 10.3, 14.1
Stored Materials
6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
5.1.1
SUBCONTRACTORS
5
Subcontractors, Work by
1.2.2, 3.3.2, 3.12.1, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7
Subcontractual Relations
5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1

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User Notes: (1500660560)

Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.7, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3, 11.1.3
Submittal Schedule
3.10.2, 3.12.5, 4.2.7
Subrogation, Waivers of
6.1.1, **11.3.7**
Substantial Completion
4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, **9.8**, 9.9.1, 9.10.3, 12.2, 13.7
Substantial Completion, Definition of
9.8.1
Substitution of Subcontractors
5.2.3, 5.2.4
Substitution of Architect
4.1.3
Substitutions of Materials
3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
5.1.2
Subsurface Conditions
3.7.4
Successors and Assigns
13.2
Superintendent
3.9, 10.2.6
Supervision and Construction Procedures
1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.7, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.3
Surety
5.4.1.2, 9.8.5, 9.10.2, 9.10.3, 14.2.2, 15.2.7
Surety, Consent of
9.10.2, 9.10.3
Surveys
2.2.3
Suspension by the Owner for Convenience
14.3
Suspension of the Work
5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14
Taxes
3.6, 3.8.2.1, 7.3.7.4
Termination by the Contractor
14.1, 15.1.6
Termination by the Owner for Cause
5.4.1.1, **14.2,** 15.1.6
Termination by the Owner for Convenience
14.4
Termination of the Architect
4.1.3
Termination of the Contractor
14.2.2
TERMINATION OR SUSPENSION OF THE CONTRACT
14
Tests and Inspections
3.1.3, 3.3.3, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 11.4.1.1, 12.2.1, **13.5**
TIME
8
Time, Delays and Extensions of
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7, 10.3.2, 10.4.1, 14.3.2, 15.1.5, 15.2.5
Time Limits
2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 12.2, 13.5, 13.7, 14, 15.1.2, 15.4
Time Limits on Claims
3.7.4, 10.2.8, **13.7**, 15.1.2
Title to Work
9.3.2, 9.3.3
Transmission of Data in Digital Form
1.6
UNCOVERING AND CORRECTION OF WORK
12
Uncovering of Work
12.1
Unforeseen Conditions, Concealed or Unknown
3.7.4, 8.3.1, 10.3
Unit Prices
7.3.3.2, 7.3.4
Use of Documents
1.1.1, 1.5, 2.2.5, 3.12.6, 5.3
Use of Site
3.13, 6.1.1, 6.2.1
Values, Schedule of
9.2, 9.3.1
Waiver of Claims by the Architect
13.4.2
Waiver of Claims by the Contractor
9.10.5, 13.4.2, 15.1.6
Waiver of Claims by the Owner
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.4.2, 14.2.4, 15.1.6
Waiver of Consequential Damages
14.2.4, 15.1.6
Waiver of Liens
9.10.2, 9.10.4
Waivers of Subrogation
6.1.1, **11.3.7**
Warranty
3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.4, 12.2.2, 13.7
Weather Delays
15.1.5.2
Work, Definition of
1.1.3
Written Consent
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 11.4.1, 13.2, 13.4.2, 15.4.4.2
Written Interpretations
4.2.11, 4.2.12

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Written Notice
2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 5.2.1, 8.2.2, 9.7, 9.10, 10.2.2, 10.3, 11.1.3, 12.2.2, 12.2.4, **13.3**, 14, 15.4.1

Written Orders
1.1.1, 2.3, 3.9, 7, 8.2.2, 12.1, 12.2, 13.5.2, 14.3.1, 15.1.2

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

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the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

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§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other

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facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume

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the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

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§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be

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required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

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§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

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§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION
Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

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§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may

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be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that

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the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or

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.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

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ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

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§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

.1 defective Work not remedied;

.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

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.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

.5 damage to the Owner or a separate contractor;

.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect,

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stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the

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Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

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§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

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§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- **.1** Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- **.2** Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- **.3** Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- **.4** Claims for damages insured by usual personal injury liability coverage;
- **.5** Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- **.6** Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- **.7** Claims for bodily injury or property damage arising out of completed operations; and
- **.8** Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction

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of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or

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otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the

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Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

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§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

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.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

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§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

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§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

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§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an

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additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

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THESE SUPPLEMENTARY CONDITIONS WERE PREPARED BY THE STATE OF LOUISIANA AND USED FOR STATE OWNED PROJECTS. DELETE ANY REFERENCE TO STATE OF LOUISIANA OR ITS AGENCIES AND SUBSIDARIES AND SUBSTITUTE BEAUREGARD PARISH SCHOOL BOARD.

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions modify, change, delete from or add to the General Conditions of the Contract for Construction, AIA Document A201, 2007 Edition. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

Articles, Paragraphs, Subparagraphs or Clauses modified or deleted have the same numerical designation as those occurring in the General Conditions.

ARTICLE 1

GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1. THE CONTRACT DOCUMENTS

In Subparagraph 1.1.1 delete the third sentence, and add the following sentence:
The Contract Documents shall include the Bid Documents as listed in the Instructions to Bidders and any modifications made thereto by addenda.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE [REFER TO *R.S. 38:2317*]

1.5.1 Delete the first sentence of the paragraph.

1.5.1 In the third sentence: delete the remainder after the word “publication”.

ARTICLE 2

OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 Delete this paragraph.

2.2.2 In the first sentence, delete: all before “…the Owner shall secure…”

ARTICLE 3

CONTRACTOR

3.4 LABOR AND MATERIALS

3.4.2 Delete this paragraph.

3.4.3 Delete this paragraph and substitute with the following:

Contractor and its employees, officers, agents, representatives, and Subcontractors shall conduct themselves in an appropriate and professional manner, in accordance with the Owner's requirements, at all times while working on the Project. Any such individual who behaves in an inappropriate manner or who engages in the use of inappropriate language or conduct while on Owner's property, as determined by the Owner, shall be removed from the Project at the Owner's request. Such individual shall not be permitted to return without the written permission of the Owner. The Owner shall not be responsible or liable to Contractor or any Subcontractor for any additional costs, expenses, losses, claims or damages incurred by Contractor or its Subcontractor as a result of the removal of an individual from the Owner's property pursuant to this paragraph. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS (R.S. 40:1724[A])

3.7.1 Delete Subparagraph 3.7.1

3.7.2 In paragraph 3.7.2, replace the word "public" with the word "State".

Delete Subparagraph 3.7.5 and substitute the following:

3.7.5 If, during the course of the Work, the Contractor discovers human remains, unmarked burial or archaeological sites, burial artifacts, or wetlands, which are not indicated in the Contract Documents, the Contractor shall follow all procedures mandated by State and Federal law, including but not limited to L.R.S. 8:671 et seq., R.S. 49:213.1 et seq., and Sections 401 & 404 of the Federal Clean Water Act. Request for adjustment of the Contract Sum and Contract Time arising from the existence of such remains or features shall be submitted in writing to the Owner pursuant to the Contract Documents.

3.8 ALLOWANCES

Delete Subparagraph 3.8.1, 3.8.2, and 3.8.3 in their entirety and add the following new Subparagraph 3.8.1:

3.8.1 Allowances shall not be made on any of the Work.

3.9 SUPERINTENDENT

3.9.1 Add the following to the end of the paragraph: Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.10.1 Add the following: For projects with a contract sum greater than $1,000,000.00, the Contractor shall include with the schedule, for the Owner's and Architect's information, a network analysis to identify those tasks which are on the critical path, i.e. where any delay in the completion of these tasks will lengthen the project timescale, unless action

is taken. A revised schedule shall be submitted with each Application and Certificate for Payment. No payment will be made until this schedule is received.

3.10.3 Delete the word "…general…" Add the following: If the Work is not on schedule, as determined by the Architect, and the Contractor fails to take action to bring the Work on schedule, then the Contractor shall be deemed in default under this Contract and the progress of the Work shall be deemed unsatisfactory. Such default may be considered grounds for termination by the Owner for cause in accordance with 14.2.

3.10.4 Add the following: Submittal by the contractor of a schedule or other documentation showing a completion date for his Work prior to the completion date stated in the contract shall not impose any obligation or responsibility on the Owner or Architect for the earlier completion date.

3.10.5 Add the following: In the event the Owner employs a commissioning consultant, the Contractor shall cooperate fully in the commissioning process and shall require all subcontractors and others under his control to cooperate. The purpose of such services shall be to ensure that all systems perform correctly and interactively according to the provisions of the Contract Documents.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following: This requirement is of the essence of the contract. The Architect shall determine the value of these documents and this amount shall not be approved for payment to the Contractor until all of the listed documents are delivered to the Architect in good order, completely marked with field changes and otherwise complete in all aspects.

ARTICLE 4

ARCHITECT

4.1 GENERAL

Delete Subparagraph 4.1.1 and substitute the following:

4.1.1 The term Architect, when used in the Contract Documents, shall mean the prime Designer (Architect, Engineer or Landscape Architect), or his authorized representative, lawfully licensed to practice architecture, engineering or landscape architecture in the State of Louisiana, identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number.

4.1.3 Delete the words: "as to whom the Contractor has no reasonable objection and"

4.2 ADMINISTRATION OF THE CONTRACT

4.2.1 In the first sentence, delete the phrase: "the date the Architect issues the final Certificate for Payment" and replace with the phrase "final payment is due, and with the

Owner's concurrence, from time to time during the one year period for correction of Work described in Section 12.2."

4.2.2 In the first sentence, after the phrase: "become generally familiar with"; insert the following: "and to keep the Owner informed about."

In the first sentence, after the phrase "portion of the Work completed", insert the following: "to endeavor to guard the Owner against defects and deficiencies in the Work,"

4.2.10 Add the following sentence to the end of Subsection 4.2.10:

There will be no restriction on the Owner having a Representative.

4.2.11 Add the following sentence to the end of Subsection 4.2.11:

If no agreement is made concerning the time within which interpretation required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretation until 15 days after written request is made for them.

4.2.14 Insert the following sentence between the second and third sentences of Subsection 4.2.14:

If no agreement is made concerning the time within which interpretation required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretation until 15 days after written request is made for them.

ARTICLE 5

SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete Subparagraph 5.2.1, and substitute the following:

5.2.1 Unless otherwise required by the Contract Documents, the Contractor shall furnish at the Pre-Construction Conference, to the Owner and the Architect, 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 Contractor payments shall be made until this information is received.

Delete Subparagraph 5.2.2 and substitute the following:

5.2.2 The Contractor shall be solely responsible for selection and performance of all subcontractors. The Contractor shall not be entitled to claims for additional time and/or

an increase in the contract sum due to a problem with performance or non-performance of a subcontractor.

Delete Subparagraph 5.2.3 and 5.2.4 and add the following:

5.2.3 The contractor shall notify the Owner when a subcontractor is to be changed and substituted with another subcontractor.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

Delete Subparagraphs 5.4.1, 5.4.2 and 5.4.3

ARTICLE 7

CHANGES IN THE WORK

7.1 GENERAL

Add the following paragraph:

7.1.4 As part of the pre-construction conference submittals, the contractor is to submit the following prior to the commencement of Work:

Fixed job site overhead cost itemized with documentation to support daily rates.
Bond Premium Rate with supporting information from the General Contractor's carrier.
Labor Burden by trade for both Subcontractors and General Contractor.
Internal Rate Charges for all significant company owned equipment.

Failure to submit this information as part of the pre-construction submittals shall prohibit the Contractor from claiming these items as costs on any change order issued on the project.

7.2 CHANGE ORDERS

Delete Subparagraph clause 7.2.1, and substitute the following paragraphs:

7.2.1 A Change Order is a written order to the Contractor prepared by the Architect and signed by the Owner and the Architect, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum or the Contract Time. Any reservation of rights, stipulation, or other modification made on the change order by the contractor will have no effect.

7.2.2 "Cost of the Work" for the purpose of Change Orders shall be costs required to be incurred in performance of the Work and paid by the Contractor and Subcontractors which shall consist of:

7.2.2.1 Wages paid direct labor personnel, delineating a labor burden markup for applicable payroll taxes, worker's compensation insurance, unemployment compensation, and social security taxes.

7.2.2.2 Cost of all materials and supplies, including the identification of each item and its cost including taxes.

7.2.2.3 Identify each necessary piece of machinery and equipment and its individual cost including taxes.

7.2.2.4 Increases in insurance premiums for those forms of insurance required by Article 11 of these Supplementary Conditions and only for those forms.

7.2.2.5 Bond costs.

Credit will not be required for Overhead and Profit.

7.2.3 Overhead and Profit - The Contractor and Subcontractor shall be due job-site and home office fixed overhead and profits on the Cost of the Work, but shall not exceed a total of 25% of the direct cost of any portion of Work:

The credit to the Owner resulting from a change in the Work shall be the sum of those items above, except credit will not be required for Overhead and Profit. Where a change results in both credits to the Owner and extras to the Contractor for related items, overhead and profit will only be computed on the net extra cost to the Contractor.

7.2.4 The cost to the Owner resulting from a change in the Work shall be the sum of: Cost of the Work (as defined at 7.2.2) and Overhead and Profit (as defined at 7.2.4), and shall be computed as follows:

7.2.4.1 When all of the Work is General Contract Work; 15% markup on the Cost of the Work.

7.2.4.2 When the Work is all Subcontract Work; 15% markup on the Cost of the Work for Subcontractor's Overhead and Profit, plus 10% markup on the Cost of the Work, not including the Subcontractor's Overhead and Profit markup, for General Contractor's Overhead and Profit.

7.2.4.3 When the Work is a combination of General Contract Work and Subcontract Work; that portion of the direct cost that is General Contract Work shall be computed per 7.2.4.1 and that portion of the direct cost that is Subcontract Work shall be computed per 7.2.4.2.

Premiums for the General Contractor's bond may be included, but after the markup is added to the Cost of the Work.

7.2.4.4 Subcontract cost shall consist of the items in 7.2.2 above plus Overhead and Profit as defined in 7.2.4.

7.2.5 Before a Change Order is prepared, the Contractor shall provide and deliver to the Architect the following information concerning the Cost of the Work, not subject to waiver, within a reasonable time after being notified to prepare said Change Order:

A detailed itemized list of labor, material and equipment costs for the General Contractor's Work including quantities and unit costs for each item of labor, material and equipment.

An itemized list of labor, material and equipment costs for each Subcontractor's and/or Sub-Subcontractor's Work including quantities and unit costs for each item of labor, material and equipment.

7.2.6 After a Change Order has been approved, no future requests for extensions of time or additional cost shall be considered for that Change Order.

7.2.7 The Contractor will be due extended fixed job-site overhead for time delays only when complete stoppage of Work occurs causing a contract completion extension, and the Contractor is unable to mitigate financial damages through replacement Work. The stoppage must be due to acts or omissions solely attributable to the Owner. In all cases the Contractor is to notify the Architect in writing as required by Article 15.1.2. Reasonable proof may be required by the architect that alternate Work could not be performed. Reasonable proof may be required by the Architect that the stoppage affected the Completion Date.

7.2.8 "Cost of the Work" whether General Contract cost or Subcontract cost shall not apply to the following:

Salaries or other compensation of the Contractor's personnel at the Contractor's principal office and branch offices.

Any part of the Contractor's capital expenses, including interest on the Contractor's capital employed for the Work.

Overhead and general expenses of any kind or the cost of any item not specifically and expressly included above in Cost of the Work.

Cost of supervision not specifically required by the Change Order.

7.2.9 When applicable as provided by the Contract, the cost to Owner for Change Orders shall be determined by quantities and unit prices. The quantity of any item shall be as submitted by the Contractor and approved by the Architect. Unit prices shall cover cost of Material, Labor, Equipment, Overhead and Profit.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.3 In the first sentence after following methods add: ", but not to exceed a specified amount."

7.3.7 Delete the following from .1 of the list: "fringe benefits required by agreement or custom,"

Delete the following from .4 of the list: "permit fees,"

Delete the following from .5 of the list: "and field office personnel"

7.3.9 Delete Subparagraph 7.3.9 and substitute the following:

Pending final determination of the total costs of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs.

ARTICLE 8

TIME

8.1 DEFINITIONS

Add the following:

8.1.5 The Contract Time shall not be changed by the submission of a schedule that shows an early completion date unless specifically authorized by change order.

8.2 PROGRESS AND COMPLETION

Add to Subparagraph 8.2.1 the following:

Completion of the Work must be within the Time for Completion stated in the Agreement, subject to such extensions as may be granted under Section 8.3. The Contractor agrees to commence Work not later than fourteen (14) days after the transmittal date of Written Notice to Proceed from the Owner and to substantially complete the project within the time stated in the Contract. The Owner will suffer financial loss if the project is not substantially complete in the time set forth in the Contract Documents. The Contractor and the Contractor's Surety shall be liable for and shall pay to the Owner the sum stated in the Contract Documents as fixed, agreed and liquidated damages for each consecutive calendar day (Saturdays, Sundays and holidays included) of delay until the Work is substantially complete. The Owner shall be entitled to the sum stated in the Contract Documents. Such Liquidated Damages shall be withheld by the Owner from the amounts due the Contractor for progress payments.

Delete Subparagraph 8.2.2

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8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 In the first sentence after the words Owner pending delete the words: "mediation and arbitration" and add the word: "litigation" and delete the last word: "determine" and add the following: "recommend, subject to Owner's approval of Change Order. If the claim is not made within the limits of Article 15, all right for future claims for that month are waived."

ARTICLE 9

PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Delete Subparagraph 9.2 and substitute the following:

9.2 At the Pre-Construction Conference, the Contractor shall submit to the Owner and the Architect a Schedule of Values prepared as follows:

9.2.1 The attached Schedule of Values Format shall be used. If applicable, the cost of Work for each section listed under each division, shall be given. The cost for each section shall include Labor, Materials, Overhead and Profit.

9.2.2 The Total of all items shall equal the Total Contract Sum. This schedule, when approved by the Architect, shall be used as a basis for the Contractor's Applications for Payment and it may be used for determining the cost of the Work in deductive change orders, when a specific item of Work listed on the Schedule of Values is to be removed. Once the Schedule of Values is submitted at the Pre-Construction Conference, the schedule may not be modified without approval from the Owner and Architect.

9.3 APPLICATIONS FOR PAYMENT

Delete Subparagraph 9.3.1 and clause 9.3.1.1 and 9.3.1.2 and substitute the following:

9.3.1 Monthly, the Contractor shall submit to the Architect an Application & Certificate for Payment on the AIA Document G702-1992, accompanied by AIA Document G703-1992, and supported by any additional data substantiating the Contractor's right to payment as the Owner or the Architect may require. Application for Payment shall be submitted on or about the first of each month for the value of labor and materials incorporated into the Work and of materials, suitably stored, at the site as of the twenty-fifth day of the preceding month, less normal retainage as follows, per R.S. 38:2248:

9.3.1.1 Projects with Contract price up to $500,000.00 – 10% of the Contract price.

9.3.1.2 Projects with Contract price of $500,000.00, or more – 5% of the Contract price.

9.3.1.3 No payment will be made until the revised schedule required by Section 3.10.1 is received.

The normal retainage shall not be due the Contractor until after substantial completion and expiration of the forty-five day lien period and submission to the Architect of a clear lien certificate, consent of surety and invoice for retainage.

Delete Subparagraph 9.3.2 and substitute the following:

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. Payments for materials or equipment stored on the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, including applicable insurance.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Subparagraph 9.5.1.7: Delete the word "repeated".

Delete Subparagraph 9.5.3

9.6 PROGRESS PAYMENTS

Delete Subparagraph 9.6.1 and substitute the following:

9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment within twenty days except for projects funded fully or in part by a Federal reimbursement program. For such projects the Owner will make payment in a timely manner consistent with reimbursement.

9.6.2 Delete the phrase: "no later than seven days" from the first sentence.

After the end of the second sentence, add the following:

R.S. 9:2784 (A) and (C) require a Contractor or Subcontractor to make payment due to each Subcontractor and supplier within fourteen (14) consecutive days of the receipt of payment from the Owner. If not paid, a penalty in the amount of ½ of 1% per day is due, up to a maximum of 15% from the expiration date until paid. The contractor or subcontractor, whichever is applicable, is solely responsible for payment of a penalty.

9.6.4 Delete the first two sentences of Subparagraph 9.6.4 and add the following to the end of the Subparagraph:

Pursuant to La. R.S. 38:2242, when the Owner receives any claim of nonpayment arising out of the Contract, the Owner shall deduct 125% of 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 where the Work has been done. 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.

9.7 FAILURE OF PAYMENT

Delete Subparagraph 9.7

9.8 SUBSTANTIAL COMPLETION: Delete this section and substitute the following:

9.8 SUBSTANTIAL COMPLETION

9.8.1 Substantial Completion is the stage in the progress of the Work when the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The Architect shall determine if the project is substantially complete in accordance with this Subparagraph.

9.8.2 When the Contractor considers that the Work is Substantially Complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work is substantially complete. A prerequisite to the Work being considered as substantially complete is the Owner's receipt of the executed Roofing Contractor's and Roofing Manufacturer's guarantees, where roofing Work is part of the Contract. Prior to inspection by the Architect, the Contractor shall notify the Architect that the project is ready for inspection by the State Fire Marshal's office. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use, the Contractor shall, before the Work can be considered as Substantially Complete, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

9.8.4 When the Architect determines that the project is Substantially Complete, he shall prepare a punch list of exceptions and the dollar value related thereto. The monetary value assigned to this list will be the sum of the cost estimate for each particular item of Work the Architect develops based on the mobilization, labor, material and equipment costs of correcting the item and shall be retained from the monies owed the contractor, above and beyond the standard lien retainage. The cost of these items shall be prepared in the same format as the schedule of values. At the end of the 45 day lien period payment shall be approved for all punch list items completed up to that time. After that payment, none of the remaining funds shall be due the contractor until all punch list items are completed and are accepted by the Architect. If the dollar value of the punch list exceeds the amount of funds, less the retainage amount, in the remaining balance of the

Contract, then the Project shall not be considered as substantially complete. If funds remaining are less than that required to complete the Work, the Contractor shall pay the difference.

9.8.5 When the preparation of the punch list is complete the Architect shall prepare a Recommendation of Acceptance incorporating the punch list and submit it to the Owner. Upon approval of the Recommendation of Acceptance, the Owner may issue a Notice of Acceptance of Building Contract which shall establish the Date of Substantial Completion. The Contractor will record the Notice of Acceptance with the Clerk of Court in the Parish in which the Work has been performed. If the Notice of Acceptance has not been recorded seven (7) days after issuance, the Owner may record the Acceptance at the Contractor's expense. All additive change orders must be processed before issuance of the Recommendation of Acceptance. The Owner will not be responsible for payment for any Work associated with change orders that is not incorporated into the contract at the time of the Recommendation of Acceptance.

9.8.6 Warranties required by the Contract Documents shall commence on the date of Acceptance of the Work unless otherwise agreed to in writing by the Owner and Contractor. Unless otherwise agreed to in writing by the Owner and Contractor, security, maintenance, heat, utilities, damage to the Work not covered by the punch list and insurance shall become the Owner's responsibility on the Date of Substantial Completion.

9.8.7 If all punch list items have not been completed by the end of the forty-five (45) day lien period, through no fault of the Architect or Owner, the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within forty-five (45) days after notification, the Surety has not completed the punch list, through no fault of the Architect or Owner, the Owner may, at his option, contract to have the balance of the Work completed and pay for such Work with the unpaid funds remaining in the Contract sum. Finding the Contractor in default shall constitute a reason for disqualification of the Contractor from bidding on future state contracts. If the surety fails to complete the punch list within the stipulated time period, the Owner may not accept bonds submitted, in the future, by the surety.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 Delete paragraph and substitute the following:

Partial Occupancy is that stage in the progress of the Work when a designated portion of the Work is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the designated portion of the Work for its intended use. The Owner may occupy or use any substantially completed portion of the Work so designated by separate agreement with the Contractor and authorized by public authorities having jurisdiction over the Work. Such occupancy or use may commence provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When

the Contractor considers the designated portion substantially complete the Contract shall prepare and submit a list to the Architect as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonable withheld.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 After the first sentence, add the following:

If the Architect does not find the Work acceptable under the Contract Documents, the Architect shall make one additional inspection; if the Work is still not acceptable, the Architect, and each of the Architect's principal consultants, shall be paid $175.00/hour for their time at the project site, for each additional inspection, to be withheld from the unpaid funds remaining in the Contract sum. The payment shall be made by the Owner and deducted from the construction contract funds.

9.10.4 Replace with the following:

The making of final payment shall not constitute a waiver of claims by the Owner for the following:

9.10.4.1 Claims, security interests or encumbrances arising out of the Contract and unsettled;

9.10.4.2 Failure of the Work to comply with the requirements of the Contract Documents irrespective of when such failure is discovered; or

9.10.4.3 Terms of special warranties required by the Contract Documents.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.2 In the first sentence, between the words: "bearing on and safety", add the words: "the health and,"

10.3 HAZARDOUS MATERIALS

10.3.1 In the first sentence after (PCB) add: "or lead"

10.3.2 After the first sentence, delete all remaining sentences.

Add at the end: "The Contract time shall be extended appropriately."

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10.4 EMERGENCIES

Delete Subparagraph 10.4 and substitute the following:

10.4 In an emergency affecting the safety of persons or property, the Contractor shall notify the Owner and Architect immediately of the emergency, simultaneously acting at his discretion to prevent damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency Work shall be determined as provided in Article 15 and Article 7.

ARTICLE 11

INSURANCE AND BONDS

Delete all of Paragraphs 11.1, 11.2 and 11.3 and substitute the following:

INSURANCE REQUIREMENTS FOR NEW CONSTRUCTION, ADDITIONS AND RENOVATIONS

11.1 The Contractor shall purchase and maintain without interruption 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, its agents, representatives, employees or subcontractors. The duration of the contract shall be from the inception of the contract until the date of final payment.

Refer to separate section Entitled "Insurance Requirements"

11.2 MINIMUM SCOPE AND LIMITS OF INSURANCE

11.2.1 Worker's Compensation

Worker's Compensation insurance shall be in compliance with the Worker's Compensation law of the State of Louisiana. Employers Liability is included with a minimum limit of $500,000 per accident/per disease/per employee. If Work is to be performed over water and involves maritime exposure, applicable LHWCA, Jones Act or other maritime law coverage shall be included and the Employers Liability limit increased to a minimum of $1,000,000. A.M. Best's insurance company rating requirement may be waived for Worker's compensation coverage only.

11.2.2 Commercial General Liability

Commercial General Liability insurance, including Personal and Advertising Injury Liability and Products and Completed Operations Liability, shall have a minimum limit per occurrence based on the project value. The Insurance Services Office (ISO) Commercial General Liability occurrence coverage form CG 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. Claims-made form is unacceptable.

Refer to separate section Entitled "Insurance Requirements

The aggregate loss limit must apply to each project. ISO form CG 25 03 (current form approved for use in Louisiana), or equivalent, shall also be submitted. The State project number, including part number, and project name shall be included on this endorsement.

COMBINED SINGLE LIMIT (CSL) PER OCCURRENCE

Type of Construction	**Projects up to $1,000,000**	**Projects over $1,000,000 up to $10,000,000**	**Projects over $10,000,000**
New Buildings:			
Each Occurrence Minimum Limit	$1,000,000	$2,000,000	$4,000,000
Per Project Aggregate	$2,000,000	$4,000,000	$8,000,000
Renovations:	**The building(s) value for the Project is N/A**		
Each Occurrence Minimum Limit	$1,000,000**	$2,000,000**	$4,000,000**
Per Project Aggregate	2 times per occur limit**	2 times per occur limit**	2 times per occur limit**

**While the minimum Combined Single Limit of $1,000,000 is required for any renovation, the limit is calculated by taking 10% of the building value and rounding it to the nearest $1,000,000 to get the insurance limit. Example: Renovation on a $33,000,000 building would have a calculated $3,000,000 combined single limit of coverage (33,000,000 times .10 = 3,300,000 and then rounding down to $3,000,000). If the calculated limit is less than the minimum limit listed in the above chart, then the amount needed is the minimum listed in the chart. Maximum per occurrence limit required is $10,000,000 regardless of building value. The per project aggregate limit is then calculated as twice the per occurrence limit.

11.2.3 Automobile Liability

Automobile Liability Insurance shall have a minimum combined single limit per occurrence of $1,000,000. ISO form number CA 00 01 (current form approved for use in Louisiana), or equivalent, is to be used in the policy. This insurance shall include third-party bodily injury and property damage liability for owned, hired and non-owned automobiles.

11.2.4 Excess Umbrella

Excess Umbrella Insurance may be used to meet the minimum requirements for General Liability and Automobile Liability only.

Refer to separate section Entitled "Insurance Requirements"

11.2.5 Builder's Risk

Builder's Risk Insurance shall be in an amount equal to the greater of the fully-completed project value or the amount of the construction contract including any amendments and shall be upon the entire Work included in the contract. The policy shall provide coverage equivalent to the ISO form number CP 10 20, Broad Form Causes of Loss (extended, if necessary, to include the perils of wind, earthquake, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure). The policy must include architects' and engineers' fees necessary to provide plans, specifications and supervision of Work for the repair and/or replacement of property damage caused by a covered peril, not to exceed 10% of the cost of the repair and/or replacement.

Flood coverage shall be provided by the Contractor on the first floor and below for projects North of the Interstate Corridor beginning at the Texas – Louisiana border at Interstate 10 East to the Baton Rouge junction of Interstate 12, East to Slidell junction with Interstate 10 to the Louisiana – Mississippi border. If flood is included in the builder's risk insurance policy, then the sub-limit shall not be less than ten percent (10%) of the total contract cost per occurrence. If flood is purchased as a separate policy, the limit shall be ten percent (10%) of the total contract cost per occurrence (with a max of $500,000 if NFIP). Coverage for roofing projects shall **not** require flood coverage.

On projects South of this corridor, flood coverage shall be provided by the State of Louisiana as the Owner. The Contractor will be liable for the $5,000 policy deductible from the Notice to Proceed date through the date of final payment of the project in the event of a flood loss.

A Specialty Contractor may provide an installation floater in lieu of a Builder's Risk policy, with the similar coverage as the Builder's Risk policy, upon the system to be installed in an amount equal to the greater of the fully-completed project value or the amount of the contract including any amendments. Flood coverage is not required.

The policy must include coverage for the Owner, Contractor and any subcontractors as their interests may appear.

11.2.6 Pollution Liability *(required when asbestos or other hazardous material abatement is included in the contract)*

Pollution Liability insurance, including gradual release as well as sudden and accidental, shall have a minimum limit of not less than $1,000,000 per claim. A claims-made form will be acceptable. A policy period inception date of no later than the first day of anticipated Work under this contract and an expiration date of no earlier than 30 days after anticipated completion of all Work under the contract shall be provided. There shall be an extended reporting period of at least 24 months, with full reinstatement of limits, from the expiration date of the policy. The policy shall not be cancelled for any reason, except non-payment of premium.

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11.2.7 Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and accepted by the Owner. The Contractor shall be responsible for all deductibles and self-insured retentions.

11.3 OTHER INSURANCE PROVISIONS

11.3.1 The policies are to contain, or be endorsed to contain, the following provisions:

11.3.1.1 Worker's Compensation and Employers Liability Coverage

11.3.1.1.1 The insurer shall agree to waive all rights of subrogation against the Owner, its officers, agents, employees and volunteers for losses arising from Work performed by the Contractor for the Owner.

11.3.1.2 General Liability Coverage

11.3.1.2.1 The Owner, its officers, agents, employees and volunteers are to be added as additional insureds as respects liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. ISO Form CG 20 10 (current form approved for use in Louisiana), or equivalent, is to be used.

11.3.1.2.2 The Contractor's insurance shall be primary as respects the Owner, its officers, agents, employees and volunteers. The coverage shall contain no special limitations on the scope of protection afforded to the Owner, its officers, officials, employees or volunteers. Any insurance or self-insurance maintained by the Owner shall be excess and non-contributory of the Contractor's insurance.

11.3.1.2.3 The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the policy limits.

11.3.1.3 Builder's Risk

The policy must include an endorsement providing the following:
In the event of a disagreement regarding a loss covered by this policy which may also be covered by a State of Louisiana self-insurance or commercial property policy through the Office of Risk Management

(ORM), Contractor and its insurer agree to follow the following procedure to establish coverage and/or the amount of loss:

Any party to a loss may make written demand for an appraisal of the matter in disagreement. Within 20 days of receipt of written demand, the Contractor's insurer and either ORM or its commercial insurance company shall each select a competent and impartial appraiser and notify the other of the appraiser selected. The two appraisers will select a competent and impartial umpire. The appraisers will then identify the policy or policies under which the loss is insured and, if necessary, state separately the value of the property and the amount of the loss that must be borne by each policy. If the two appraisers fail to agree, they shall submit their differences to the umpire. A written decision by any two shall determine the policy or policies and the amount of the loss. Each insurance company agrees that the decision of the appraisers and the umpire if involved will be binding and final and that neither party will resort to litigation. Each of the two parties shall pay its chosen appraiser and bear the cost of the umpire equally.

11.3.1.4 All Coverages

11.3.1.4.1 Coverage shall not be canceled, suspended, or voided by either party (the Contractor or the insurer) or reduced in coverage or in limits except after 30 days written notice has been given to the Owner. Ten-day written notice of cancellation is acceptable for non-payment of premium. Notifications shall comply with the standard cancellation provisions in the Contractor's policy.

11.3.1.4.2 Neither the acceptance of the completed Work nor the payment thereof shall release the Contractor from the obligations of the insurance requirements or indemnification agreement.

11.3.1.4.3 The insurance companies issuing the policies shall have no recourse against the Owner for payment of premiums or for assessments under any form of the policies.

11.3.1.4.4 Any failure of the Contractor to comply with reporting provisions of the policy shall not affect coverage provided to the Owner, its officers, agents, employees and volunteers.

11.3.2 ACCEPTABILITY OF INSURERS

All required insurance shall be provided by a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located. Insurance shall be placed with insurers with an A.M. Best's rating of **A-:VI or higher**. This rating

requirement may be waived for Worker's compensation coverage only.

If at any time an insurer issuing any such policy does not meet the minimum A.M. Best rating, the Contractor shall obtain a policy with an insurer that meets the A.M. Best rating and shall submit another certificate of insurance as required in the contract.

11.3.3 VERIFICATION OF COVERAGE

Contractor shall furnish the Owner with Certificates of Insurance reflecting proof of required coverage. The Certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The Certificates are to be received and approved by the Owner before Work commences and upon any contract renewal thereafter. The Certificate Holder must be listed as follows:

State of Louisiana
Name of Owner
Owner Address
City, State, Zip
Attn: Project # _____

In addition to the Certificates, Contractor shall submit the declarations page and the cancellation provision endorsement for each insurance policy. The Owner reserves the right to request complete certified copies of all required insurance policies at any time.

Upon failure of the Contractor to furnish, deliver and maintain such insurance as above provided, this contract, at the election of the Owner, may be suspended, discontinued or terminated. Failure of the Contractor to purchase and/or maintain any required insurance shall not relieve the Contractor from any liability or indemnification under the contract.

If the Contractor does not meet the insurance requirements at policy renewal, at the option of the Owner, payment to the Contractor may be withheld until the requirements have been met, OR the Owner may pay the renewal premium and withhold such payment from any monies due the Contractor, OR the contract may be suspended or terminated for cause.

11.3.4 SUBCONTRACTORS

Contractor shall include all subcontractors as insureds under its policies OR shall be responsible for verifying and maintaining the certificates provided by each subcontractor. Subcontractors shall be subject to all of the requirements stated herein. The Owner reserves the right to request copies of subcontractor's certificates at any time.

If Contractor does not verify subcontractors' insurance as described above, Owner has the right to withhold payments to the Contractor until the requirements have been met.

11.3.5 WORKER'S COMPENSATION INDEMNITY

In the event Contractor is not required to provide or elects not to provide Worker's compensation coverage, the parties hereby agree the Contractor, its Owners, agents and employees will have no cause of action against, and will not assert a claim against, the State of Louisiana, its departments, agencies, agents and employees as an employer, whether pursuant to the Louisiana Worker's Compensation Act or otherwise, under any circumstance. The parties also hereby agree that the State of Louisiana, its departments, agencies, agents and employees shall in no circumstance be, or considered as, the employer or statutory employer of Contractor, its Owners, agents and employees. The parties further agree that Contractor is a wholly independent Contractor and is exclusively responsible for its employees, Owners, and agents. Contractor hereby agrees to protect, defend, indemnify and hold the State of Louisiana, its departments, agencies, agents and employees harmless from any such assertion or claim that may arise from the performance of this contract.

11.4 PERFORMANCE AND PAYMENT BOND

Add the following Subparagraph 11.4.3:

11.4.3 RECORDATION OF CONTRACT AND BOND [38:2241A(2)]

The Owner shall record within thirty (30) days the Contract Between Owner and Contractor and Performance and Payment Bond with the Clerk of Court in the Parish in which the Work is to be performed.

ARTICLE 12

UNCOVERING AND CORRECTION OF WORK

12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

At the end of the paragraph, add the following sentences: "If the Contractor fails to correct Work identified as defective within a thirty (30) day period, through no fault of the Designer, the Owner may hold the Contractor in default. If the Owner finds the Contractor in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the nonconforming Work, through no fault of the Architect or Owner, the Owner may contract to have nonconforming Work corrected and hold the Surety and Contractor responsible for the cost, including architectural fees and other indirect costs. If the Surety fails to correct the Work within the stipulated time period and fails to meet its obligation to pay the costs, the Owner may elect not to accept bonds submitted in the future by the Surety. Finding the Contractor in default shall constitute a reason for disqualification of the Contractor from bidding on future state contracts.

12.2.2 AFTER SUBSTANTIAL COMPLETION

12.2.2.1 At the end of the paragraph delete the last sentence and add the following sentences: If the Contractor fails to correct nonconforming Work within a thirty (30) day period, through no fault of the Architect or Owner, the Owner may hold

the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the nonconforming Work, through no fault of the Architect or Owner, the Owner may contract to have the nonconforming Work corrected and hold the Surety responsible for the cost including architects fees and other indirect costs. Corrections by the Owner shall be in accordance with Section 2.4. If the Surety fails to correct the nonconforming Work within the stipulated time period and fails to meet its obligation to pay the costs, the Owner may not accept bonds submitted, in the future, by the Surety.

12.2.2.1 At the end of the paragraph delete the last sentence and add the following sentences: If the Contractor fails to correct Work covered by warranties within a thirty (30) day period, through no fault of the Architect or Owner, the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the warranty Work, through no fault of the Architect or Owner, the Owner may contract to have the warranty Work corrected and hold the Surety responsible for the cost including architects fees and other indirect costs. Corrections by the Owner shall be in accordance with Section 2.4. If the Surety fails to correct the warranty Work within the stipulated time period and fails to meet its obligation to pay the costs, the Owner may not accept bonds submitted, in the future, by the Surety.

ARTICLE 13

MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Delete all after the word “located”.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 In the second sentence, delete “Except as … 13.2.2”

Delete paragraph 13.2.2

13.4 RIGHTS AND REMEDIES

Add the following clause 13.4.3

13.4.3 The Nineteenth Judicial Court in and for the Parish of East Baton Rouge, State of Louisiana shall have sole jurisdiction and venue in any action brought under this contract.

THESE SUPPLEMENTARY CONDITIONS WERE PREPARED BY THE STATE OF LOUISIANA AND USED FOR STATE OWNED PROJECTS. DELETE ANY REFERENCE TO STATE OF LOUISIANA OR ITS AGENCIES AND SUBSIDARIES AND SUBSTITUTE BEAUREGARD PARISH SCHOOL BOARD.

13.5 TESTS AND INSPECTIONS

In Subparagraph 13.5.1, delete the second sentence and substitute the following:

The Contractor shall make arrangements for such tests, inspections and approvals with the Testing Laboratory provided by the Owner, and the Owner shall bear all related costs of tests, inspections and approvals.

Delete the last sentence of Subparagraph 13.5.1

13.6 INTEREST

Delete Paragraph 13.6

13.7 TIME LIMITS ON CLAIMS

Delete Paragraph 13.7 (See L.R.S. 38:2189).

ARTICLE 14

TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

Delete clause 14.1.1.4

In Subparagraph 14.1.3, after the word “profit” add the following: “for Work completed prior to stoppage”.

14.2 TERMINATION BY THE OWNER FOR CAUSE

Add the following clause:

14.2.1.5 Failure to complete the punch list within the lien period as provided in 9.8.7.

14.2.3 Add the following sentence:

Termination by the Owner shall not suspend assessment of liquidated damages against the Surety.

14.2.5 Add the following Subparagraph:

If an agreed sum of liquidated damages has been established, termination by the Owner under this Article will not relieve the Contractor and/or surety of his obligations under the liquidated damages provisions and the Contractor and/or surety shall be liable to the Owner for per diem liquidated damages.

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ARTICLE 15

CLAIMS AND DISPUTES

15.1 CLAIMS

In the first sentence of Subparagraph 15.1.1, after the word "money", add the phrase: "extension of time,"

15.1.2 Add the following to the end of the paragraph: A Reservation of Rights and similar stipulations shall not be recognized under this contract as having any effect. A party must make a claim as defined herein within the time limits provided.

15.1.3 In the second sentence of the Subparagraph, delete "the decisions of the Initial Decision Maker" and replace with: "his/her decision".

Delete Paragraph 15.1.5.2 and substitute the following:

If adverse weather conditions are the basis for a claim for additional time, the Contractor shall document that weather conditions had an adverse effect on the scheduled construction. An increase in the contract time due to weather shall not be cause for an increase in the contract sum. At the end of each month, the Contractor shall make one Claim for any adverse weather days occurring within the month. The Claim must be accompanied by sufficient documentation evidencing the adverse days and the impact on construction. Failure to make such Claim within twenty-one (21) days from the last day of the month shall prohibit any future claims for adverse days for that month.

15.1.5.3 Add the following Subparagraph:

The following are considered reasonably anticipated days of adverse weather on a monthly basis:

January	11 days	July	6 days
February	10 days	August	5 days
March	8 days	September	4 days
April	7 days	October	3 days
May	5 days	November	5 days
June	6 days	December	8 days

The Contractor shall ask for total adverse weather days. The Contractor's request shall be considered only for days over the allowable number of days stated above.

Note: Contract is on a calendar day basis.

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15.2 INITIAL DECISION

15.2.1 In the second sentence, delete the word "will" and replace with: "shall always".

In the second sentence, delete the phrase: "unless otherwise indicated in the Agreement."

In the third sentence, delete the word "mediation" and replace with: "litigation".

In the third sentence, delete: "unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered."

15.2.5 In the middle of the first sentence, delete all after the phrase: "rejecting the Claim".

In the second sentence, delete the phrase: "and the Architect, if the Architect is not serving as the Initial Decision Maker."

In the third sentence, delete all after: "binding on the parties" and add the following: "except that the Owner may reject the solution or suggest a compromise or both."

15.2.6 Delete Paragraph.

Delete Subparagraph 15.2.6.1

15.3 MEDIATION

Delete Article 15.3

15.4 ARBITRATION

Delete Article 15.4

R-1020 (4/12)

LDR
Contributing to a better quality of life

Designation of Construction Contractor as Agent of a Governmental Entity Sales Tax Exemption Certificate

_____ , an agency of the United
Legal Name of Governmental Entity

States government, or an agency, board, commission, or instrumentality of the State of Louisiana or its political subdivisions, including parishes, municipalities and school boards, does hereby designate the following contractor as its agent for the purpose of making sales tax exempt purchases on behalf of the governmental body:

Name of Contractor		
Address		
City	State	ZIP

This designation of agency shall be effective for purchases of component construction materials, taxable services and leases and rentals of tangible personal property for the following named construction project:

Construction Project	Contract Number

This designation and acceptance of agency is effective for the period

Beginning Date *(mm/dd/yyyy)*	End Date *(mm/dd/yyyy)*

Purchases for the named project during this period by the designated contractor shall be considered as the legal equivalent of purchases directly by the governmental body. Any materials purchased by this agent shall immediately, upon the vendor's delivery to the agent, become the property of this government entity. This government entity, as principal, assumes direct liability to the vendor for the payment of any property, services, leases, or rentals made by this designated agent. This agreement does not void or supersede the obligations of any party created under any construction contract related to this project, including specifically any contractual obligation of the construction contractor to submit payment to the vendors of materials or services for the project.

This contractor-agent is not authorized to delegate this purchasing agency to others; separate designations of agency by this governmental entity are required for each contractor or sub-contractor who is to purchase on behalf of this governmental entity. The undersigned hereby certify that this designation is the entirety of the agency designation agreement between them. In order for a purchase for an eligible governmental entity through a designated agent to be eligible for sales tax exemption, the designation of agency must be made, accepted, and disclosed to the vendor before or at the time of the purchase transaction.

Designation of Agency		
Signature of Authorized Designator		Date *(mm/dd/yyyy)*
Name of Authorized Designator		
Name of Governmental Entity		
Address		
City	State	ZIP

Acceptance of Agency		
Signature of Contractor or Subcontractor Authorized Acceptor		Date *(mm/dd/yyyy)*
Name of Contractor's or Subcontractor's Acceptor		
Name of Contractor		
Address		
City	State	ZIP

This designation of agency form, when properly executed by both the contractor and the governmental entity, shall serve as evidence of the sales tax exempt status that has been conferred onto the contractor. No other exemption certificate form is necessary to claim exemption from sales taxes. The agency agreement evidenced by this sales tax exemption certificate must be implemented at the time of contract execution with the governmental entity. The contract between the governmental entity and his agent must contain provisions to authenticate the conferment of agency.

AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:

PROJECT: DRAFT

APPLICATION NO: 001

Distribution to:
OWNER:
ARCHITECT:
CONTRACTOR:
FIELD:
:

PERIOD TO:

CONTRACT FOR: General Construction

CONTRACT DATE:

PROJECT NOS: / /

FROM CONTRACTOR:

VIA ARCHITECT:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM	$0.00
2. NET CHANGE BY CHANGE ORDERS	$0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)	$0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	$0.00
5. RETAINAGE:	
a. 0 % of Completed Work (Column D + E on G703: $0.00)=	$0.00
b. 0 % of Stored Material (Column F on G703: $0.00)=	$0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703)	$0.00
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)	$0.00
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)	$0.00
8. CURRENT PAYMENT DUE	$0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	$0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	$0.00	$0.00
Total approved this Month	$0.00	$0.00
TOTALS	$0.00	$0.00
NET CHANGES by Change Order		$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of:
County of:
Subscribed and sworn to before me this day of
Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED $0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

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User Notes:

(1951821157)

AIA® Document G703™ – 1992

Continuation Sheet

AIA Document, G702™–1992, Application and Certification for Payment, or G736™–2009, Project Application and Project Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.
In tabulations below, amounts are in US dollars.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:	001
APPLICATION DATE:	
PERIOD TO:	
ARCHITECT'S PROJECT NO:	

A	B	C	D	E	F	G		H	I
			WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
	GRAND TOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00%**	**0.00**	**0.00**

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User Notes:

(1177251379)

Beauregard Parish School Board

CHANGE ORDER

Change Order No.: **#**
Date: **##/##/2024**
Contract Date: **##/##/2024**

Project No.: **Beauregard Parish School Board**
Champeaux Evans Hotard - Project No. 2300

Project Name: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

To: **####################**
####################
####################

You are hereby directed to make the following change(s) in this Contract:
(Attach Itemized Recap Sheet)

The Original Contract Sum	**$ ###,###.##**
Net Change by Previous Change Order	**$ ###,###.##**
Contract Sum Prior to this Change Order	**$ ###,###.##**
Contract Sum will be **INCREASED/DECREASED** by this Change Order	**$ ###,###.##**
New Contract Sum Including this Change Order	**$ ###,###.##**

Contract Time will be **INCREASED / DECREASED** by: **## days**

Revised Contract Completion Date: **####### ##, 2024**

RECOMMENDED	ACCEPTED	APPROVED
Champeaux Evans Hotard, APAC (DESIGNER)	**################ ################ (CONTRACTOR)**	**Beauregard Parish School Board (OWNER)**
702 Dr. Michael DeBakey Dr. Lake Charles, LA 70601	**################ ################**	**202 West Third Street DeRidder, LA 70634**
By: _____	By: _____	By: _____
Dated: _____	Dated: _____	Dated: _____

Beauregard Parish School Board

BENEFICIAL OCCUPANCY

* Not for Recordation *

Dated: **########## ##, 2024**

Project Name: **South Beauregard High School**
Sewer Treatment Plant
for the Beauregard Parish School Board

Project No.: **Champeaux Evans Hotard, APAC - Project No. 2300**

Architect: **Champeaux Evans Hotard, APAC**
702 Dr. Michael DeBakey Drive
Lake Charles, LA 70601

Contractor: ##########
##########
#########, ## #####

Owner: **Beauregard Parish School Board**
202 West Third Street
DeRidder, LA 70634

The Owner desires to occupy and utilize the below described portion(s) of the Project, prior to Acceptance of the Project.

The below described portion(s) of the Project is/are, to the best of my knowledge and belief, complete to a point that they may be legally occupied, and utilized as intended, in accordance with the requirements of the Contract Documents, and applicable codes.

The Owner's occupancy of any portion of this project does not violate any applicable warranties, and does not constitute Acceptance of the Project, as a whole.

Portion(s) Occupied: ##

Date Occupied: ######## **##, 2024**

Warranty Items Covered by Occupancy (See attached list).

Punch List: Attached, dated _____ Value _____
(If not applicable, indicate "N/A")

Accepted By: _____
Architect
Champeaux Evans Hotard, APAC

_____
Contractor
##########

_____
Owner
Beauregard Parish School Board

* Not For Recordation *

Beauregard Parish School Board

RECOMMENDATION OF ACCEPTANCE

Dated: **########## ##, 2024**

Project Name: **South Beauregard High School**
Sewer Treatment Plant
for The Beauregard Parish School Board

Project No.: **Champeaux Evans Hotard, APAC - Project No. 2300**

Architect: **Champeaux Evans Hotard, APAC**
702 Dr. Michael DeBakey Drive
Lake Charles, LA 70601

Contractor: **##################**
##################
#########, ## #####

Owner: **Beauregard Parish School Board**
202 West Third Street
DeRidder, LA 70634

I hereby certify that, to the best of my knowledge and belief, this project is complete or substantially complete, in accordance with the Plans and Specifications to a point that it can be used for the purpose intended. As such, I hereby recommend that this project be accepted.

Date of Acceptance by Architect: **######## ##, 2024**

Contract Date of Completion: **######## ##, 2024**

Number of Days **Overrun / Underrun: ## days**

Liquidated Damages Per Day Stipulated in Contract: **$500.00**

Value of Punch List (Itemized List Attached): **$##,###.##**

Was Part of the Project Occupied Prior To Acceptance: **Yes / No**

Portion(s) Occupied: ########################## (Attach Beneficial Occupancy Forms)

Accepted: _____
Champeaux Evans Hotard, APAC

For Use By Owner:

I concur in the Acceptance of this project: _____
Beauregard Parish School Board

⚠ This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

ℹ The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Hazards by Location

Search Information

Coordinates: 30.5699777590013, -93.23649476721191

Elevation: 99 ft

Timestamp: 2024-03-13T15:31:11.088Z

Hazard Type: Wind

ASCE 7-16

MRI 10-Year	74 mph
MRI 25-Year	83 mph
MRI 50-Year	92 mph
MRI 100-Year	98 mph
Risk Category I	111 mph
Risk Category II	119 mph
Risk Category III	⚠ 130 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

Risk Category IV	⚠ 135 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

ASCE 7-10

MRI 10-Year	76 mph
MRI 25-Year	84 mph
MRI 50-Year	93 mph
MRI 100-Year	101 mph
Risk Category I	112 mph
Risk Category II	121 mph
Risk Category III-IV	⚠ 130 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

ASCE 7-05

ASCE 7-05 Wind Speed	101 mph

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

While the information presented on this website is believed to be correct, ATC and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in the report should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. ATC does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the report provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the report.

National Flood Hazard Layer FIRMette

93°14'30"W 30°34'27"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

93°13'53"W 30°33'56"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/13/2024 at 11:45 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

SECTION 011000 – PROJECT SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. The Project shall include all work as detailed in and/or as described by the Contract Documents.
2. Coordination with the Owner's on-going operations.

1.2 WORK COVERED BY THE CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

1. General Scope of Work:

THIS PROJECT CONSISTS OF THE INSTALLATION OF A NEW 46,500 G.P.D. MECHANICAL SEWER TREATMENT PLANT (DESIGNED TO ACCOMMODATE FUTURE EXPANSION TO 62,500 G.P.D.), TO SERVE THE EXISTING HIGH SCHOOL, MIDDLE SCHOOL, AND UPPER ELEMENTARY SCHOOL BUILDINGS TO THE EAST, AS WELL AS SEWER LINE REVISIONS, INCLUDING A NEW SEWER MAIN LINE SERVING THE EXISTING SCHOOLS, AND FUTURE FOOTBALL STADIUM IMPROVEMENTS PROJECT.

ALSO INCLUDED IS A NEW ELECTRICAL SERVICE (SERVICE FEES PAID BY B.P.S.B.), SEWER MAIN LINE EXTENSION, WATER LINE EXTENSION, FENCING, CONCRETE, PROTECTIVE BARRIERS, SIGNAGE, AND OTHER MISCELLANEOUS WORK.

THE EXISTING SEWER OXIDATION PONDS SHALL REMAIN IN USE UNTIL SUCH TIME THAT THE NEW SEWER TREATMENT PLANT IS FULLY OPERATIONAL, INSPECTED BY ALL AUTHORITIES HAVING JURISDICTION, AND PUT INTO SERVICE,

THE EXISTING SEWER OXIDATION PONDS SHALL REMAIN AT THE CONCLUSION OF THE CURRENT PROJECT, HOWEVER, THE OWNER, BEAUREGARD PARISH SCHOOL BOARD HAS ENGAGED BOOTH ENVIRONMENTAL SERVICES, LLC, OF LAKE CHARLES, LA TO BEGIN THE PROCESS OF ABANDONMENT, DECOMMISSIONING, AND REMOVAL OF THE POND, UNDER A SEPARATE / DIRECT CONTRACT AGREEMENT.

THERE IS ONE (1) ALTERNATE:
ALTERNATE NO.1 - ADD – ADDITIONAL TREE REMOVAL, BRUSH CLEARING, DEBRIS & FENCE REMOVAL, DRAINAGE PIPING, SWALE AND GRADING, AND ASSOCIATED WORK, AT THE SOUTH SIDE OF THE NEW OXIDATION POND SOUTH FENCE AS INDICATED ON THE DRAWINGS.

2. Allowances:

   Refer to Specification Section 012100 "Allowances" for Allowances to be included in the Contractor's Bid Price.

3. Alternates:

   Refer to Specification Section 012300 "Alternates and Unit Prices" and the Louisiana Uniform Public Works Bid Form for Alternate pricing required to be provided as part of the Bid.

4. Unit Prices:

   Refer to Specification Section 012300 "Alternates and Unit Prices" and the Louisiana Uniform Public Works Unit Price Form for Unit Prices required to be provided as part of the Bid, and Unit Price Extension amounts to be included in the Bid price.

5. Responsibility for the following utility services will be as noted below, and that party will bear the cost of any applicable utility service fees for the same:

   a. **New Electrical Service to Meter Location –** ***Utility Fees Paid By Owner.***

   b. **New Domestic Water Tap & Service to Meter Location -** ***Not Applicable.***

   c. **Fire Water Tap & Service to Meter Location –** ***Not Applicable.***

   d. **Gas Tap & Service to Meter Location -** ***Not Applicable.***

   e. **Sewer Tap & Service to Site –** ***Not Applicable.***

   f. **Sewer Treatment Plant –** ***By Contractor***

   g. **Telephone Service –** ***Not Applicable***

   h. **Cable TV Service –** ***Not Applicable***

   i. **Internet Service –** ***Not Applicable***

1.3 COORDINATION & INTERACTION WITH SITE AND OCCUPANTS

A. Owner Occupancy: The Owner **WILL** occupy all areas while work is on-going.

1. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits without impeding egress, unless otherwise indicated. Renovation work within the existing building may be scheduled outside normal work hours, in order to prevent interruptions to the Owners operations.

2. Workers shall not have contact with, or otherwise interact with occupants. Issues involving in appropriate contact or interaction with occupants, at the sole discretion of the Owner, may result in immediate removal from the project site, and contact of Police or other authorities, as is appropriate.

3. Provide temporary barricades as required by the Owner to maintain the safety of occupants, and the general public.

a. **Where indicated in the Contract Documents, or as otherwise, directed by the Owner, provide rigid barricades, typically 6' high chain link fencing with ground-set posts, and continuous top and bottom tension wires or rails, as is required for the application.**

Panel-type systems may be utilized in certain applications, across existing paving, and where debris screen is not required.

b. **At locations where occupants will be in close proximity to the work, provide opaque mesh screening, to protect occupants from debris, and to visually separate occupants and workers.**

c. **Flexible orange safety fencing may be used for material storage areas, or to direct vehicular or automobile traffic, or as a perimeter barricade around trees and/or other areas that are off limits to construction traffic.**

d. **Flexible orange safety fencing is not acceptable for separation of occupants from work areas.**

e. **No work shall commence on the site, until temporary barricades have been installed, inspected, and approved by the Owner.**

f. **The Owner reserves the right to stop the work at any time that barricades have been removed or damaged, as necessary to protect the safety of the Students, employees, or visitors.**

g. **No additional compensation will be made to the Contractor for work stoppages resulting from safety-related issues caused by the Contractor or his Subcontractors.**

4. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct doors, corridors, walkways, or other occupied or used facilities without written permission from Owner and the Authorities Having Jurisdiction.

5. Notify the Owner not less than 1 week in advance of activities that will affect Owner's operations including but not limited to: water, power, sewer, gas, climate control, telephone, data, access, etc.

6. Contractor shall provide a safe and secure construction site and areas adjacent to construction, providing all necessary protections for visitors and the general public. Temporary fencing may be required over and above that which may be indicated on the Drawings.

7. Exercise care when working around existing trees. Provide protection for existing trees to remain. Store materials away from trees and tree roots.

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances, as listed in Section 3.3 - "SCHEDULE OF ALLOWANCES", below:

1.2 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date(s) when final selection and purchase of any product(s) and/or system(s) described by an allowance must be completed, in order to avoid delays to the Work.

B. At the Architect's request, obtain multiple proposals for each item to be included provided for by use of the allowance.

C. Purchase and install products and/or systems selected by Architect from the designated and approved supplier(s).

1.3 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the format and with supporting documentation, as required by the Owner for all Change Order Requests.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Coordinate and process submittals for items related to allowances in the same manner as required for other portions of the Work.

1.4 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.5 LUMP-SUM, UNIT-COST, AND QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include taxes, freight, and delivery to Project site.

B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.6 **ADMINISTRATIVE PROCEDURES FOR ALLOWANCES**

A. **The amount of the Allowance is to be included in the Contractor's Bid Amount, in such a way that the total amount of the Allowance is incorporated PRIOR to the application of the Contractor's Overhead and Profit, Insurances, Bonds, Permits, Fees, Supervision, field expenses, and other related costs.**

B. **The Contractor's Overhead and Profit, Insurance, Bonds, Permits, Fees, Supervision, field expenses, and other related costs associated with the work to be applied to the Allowance are to be included in the Original Contract Sum, but are not part of the Allowance.**

C. **Change Orders to be applied to the Allowance will include only the actual Materials, Sales and Use Taxes (if applicable), Labor, Labor Taxes, and Equipment Rental costs directly associated with the work being applied to the Allowance. No Overhead, Profit, Insurance, Bonds, Permits, Fees, Supervision, field expenses, or other similar costs will be applied to the Allowance.**

D. **Each Allowance shall be listed as a separate line item on the Contractor's Application for Payment.**

E. **Allowances shall be used only as directed by the Architect, after approval by the Owner. Amounts to be charged to the Allowance shall be applied only upon receipt and approval of a formal written Change Order Request detailing the Change, along with all required supporting information.**

F. **At Project closeout, any unused amounts remaining in the Allowance will be credited to the Owner by a formal, written Change Order.**

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. **ALLOWANCE NO.1 - (Lump Sum) Owner's Contingency Allowance**

The General Contractor shall include in the Base Bid Price, the Lump Sum of $25,000.00 for the Owner's Contingency Allowance.

B. **UNIT PRICE ALLOWANCES (Lump Sum) – Not Applicable**

END OF SECTION 012100

SECTION 012300 - ALTERNATES & UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

ALTERNATE NO.1 (ADD) - Additional Tree Removal, Brush Clearing, Debris & Fence Removal, Drainage Piping, Swale and Grading, and associated work at the South Side of the New Oxidation Pond South Fence as indicated on the Drawings.

3.2 SCHEDULE OF UNIT PRICES

There are NO UNIT PRICES.

Reference the Louisiana Uniform Public Work Unit Price Form, included in the Project Manual.

END OF SECTION 012300

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. See Division 1 Section 012100 "Allowances" for procedural and administrative requirements for handling and processing allowances.

C. See Division 1 Section 012300 "Alternates and Unit Prices" for procedural and administrative requirements for using unit prices.

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, which do not involve an adjustment to the Contract Sum or the Contract Time.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within the time period specified in the Proposal Request, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor and supervision directly attributable to the change.
    d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and detailing the effect that the change will have on the Work.

    a. Provide a complete description of the proposed change.
    b. Indicate the effect of the proposed change on both the Contract Sum and the Contract Time.

2. Include a list of quantities of products required, or eliminated, and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include detailed breakdown of costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Submit claims for increased costs related to a change in scope or nature of the unit price or allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within **21** days of receipt of the Change Order Request or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than **21** days after such authorization.

1. Do not include any Contractor's or Subcontractor's indirect expense in the Change Order cost, amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to the Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.4 UNIT PRICES

A. Unit Price Adjustment: To adjust the Contract Amount based on unit price quantities, base each Change Order proposal on the difference between the estimated quantity provided as part of the Contract Documents and the actual documented quantity of work in-place, multiplied by the unit price amount.

1. All Overhead, Profit, Bonds, Insurances, Permits, Fees, Supervision, and other related costs are to be included in the Unit Cost.
2. Submit substantiation of any time impact to the Contract Duration due to the change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
3. The Owner reserves the right to verify the quantity of work-in-place by independent quantity survey, measure, or count.

1.5 ALLOWANCES

A. Allowance Adjustment: To allowance amounts, base each Change Order proposal on the difference between the per-unit purchase price amount and the allowance, multiplied by the final measurement or quantity of work-in-place.

1. Include installation costs in the purchase price amount only where indicated as part of the allowance.
2. If requested, prepare an explanation and supporting documentation to substantiate the distribution of additional labor, equipment, profit, overhead, bonds, insurances, permits, fees, or other related costs claimed on the difference between the original allowance amount or quantity provided in the Contract Documents and the actual amount or quantity of work-in-place.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. The Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

1.6 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701, or the Owner's standard Change Order Form, if applicable.

1.7 FIELD ORDER

A. Field Order: The Architect may issue a Field Order on the Owner's standard form, if applicable.

1. The Field Order is a directive to the Contractor for changes to the Work which, if not implemented expeditiously, might cause delays to the project, or result in damage or harm to property or individuals, and where the Owner and Contractor have not yet come to an agreement on changes in the Contract Sum or Contract Time. Upon receipt of a Field Order, the contractor shall promptly proceed with the change in the Work described therein.

2. The Field Order shall instruct the Contractor to proceed immediately with a change in the Work, pending subsequent documentation and inclusion in a formal written Change Order.

3. The Field Order shall contain a description of the nature or scope change in the Work. It will also designate the method to be followed to determine the change in the Contract Sum and/or the Contract Time.

4. The Field Order shall be prepared and issued by the Architect, however, the Field Order shall not be valid without the Owner's authorization, as indicated by the Owner's Facility Manager or Project Manager signature on the Field Order.

5. Documentation: Maintain detailed records on a time and material basis of work required by the Field Order.

6. After completion of the work, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
7. Failure to provide thorough, detailed, and complete documentation of the work performed as part of the Field Order will result in the disqualification of the parts of the Contractor's request for compensation in question.

1.8 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: The Architect may issue a Construction Change Directive on AIA Document G714, or the Owner's standard form, if applicable.

1. The Construction Change Directive instructs the Contractor to proceed immediately with a change in the Work, pending subsequent documentation and inclusion in a formal written Change Order.

2. The Construction Change Directive shall contain a description of the nature or scope change in the Work. It will also designate the method to be followed to determine the change in the Contract Sum and/or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
2. Failure to provide thorough, detailed, and complete documentation of the work performed as part of the Construction Change Directive will result in the disqualification of the parts of the Contractor's request for compensation in question.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012610 - WEATHER-RELATED DELAYS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing modifications to the Contract Time, specifically related to inclement weather and weather-related delays.

1.2 REQUESTS FOR EXTENSION OF CONTRACT TIME DUE TO WEATHER

A. If adverse weather conditions are the basis for a claim for additional time, the Contractor shall document both the weather conditions causing the delay, and that those weather conditions had an adverse effect on the scheduled construction.

B. At the end of each month, the Contractor shall make one claim for any adverse weather days occurring within that month. The claim must be accompanied by sufficient documentation evidencing the adverse days, as well as the direct impact on the scheduled construction. Failure to make such Claim within 14 days of the last day of the month shall prohibit any future claims for adverse days for that month.

C. Contractor-Initiated Requests for Extension of Time due to weather: If inclement weather or weather-related conditions cause a delay to the project, the Contractor may request an Extension of Time by submitting a written request to the Architect. Such request shall comply with all requirements of this Section.

1. Include a statement outlining the nature of the weather delay and detailing the effect that the change will have on the Work.

    a. Provide a description of the weather delay for each day claimed.
    b. Indicate the effect of the weather delay on the work scheduled for each day claimed.
    c. Indicate the effect of the weather delay on the Contract Time.
    d. Provide documentation to substantiate the weather delay.

        1. Examples of such documentation may include the following:

            a. Climate/Data Reports issued by the National Weather Service
            b. Copies of the Contractor's Daily Log indicating the weather conditions for each day claimed, the work scheduled for that day, any work performed on site that day, and the portion of the day worked, if any.

2. Include an updated Contractor's Construction Schedule that indicates the effect of the delay, including, but not limited to, changes in activity duration, start and finish times, and activity relationship.

D. Claims for lost time due to inclement weather or weather-related conditions, shall be submitted as detailed in Specification Section 012600 "Contract Modification Procedures".

E. **Claims for lost time due to inclement weather shall take into account the Reasonably Anticipated Days of Inclement Weather per month, as stipulated in the Supplementary Conditions, or elsewhere in the Contract Documents.**

1. **Claims for additional time shall clearly indicate the total number of adverse weather or site conditions in the previous month, minus the stipulated number or reasonably anticipated adverse weather days, resulting in the number of days requested for the month.**

2. **Reasonably Anticipated Weather Delays shall be as follows:**

January	**11 days**
February	**10 days**
March	**8 days**
April	**7 days**
May	**5 days**
June	**6 days**
July	**6 days**
August	**5 days**
September	**4 days**
October	**3 days**
November	**5 days**
December	**8 days**

F. **Claims for weather-related delays shall be calculated on a monthly basis.**

G. **Submit claims for lost time due to inclement weather or weather-related conditions to the Architect, on a monthly basis, with pay application for the same time period and no later than the 10th day of the following month.**

H. **Days with inclement weather that do not adversely impact the critical path as indicated on the Contractor's submitted construction schedule shall not be considered as a delay to the project by the Owner.**

I. **The Owner retains the right to reject claims for lost time due to inclement weather or weather-related conditions submitted later than the 10th day of the following month.**

J. **An increase in the Contract Time due to weather-related delays shall not be cause for an increase in the Contract Amount**.

1.3 CHANGE ORDER PROCEDURES

A. Upon the Owner's approval of a Request for Extension of the Contract Time due to Weather-Related Delays, the Architect will prepare and issue a Change Order for the signatures of the Owner and Contractor on AIA Document G701, or the Owner's standard Change Order Form, if applicable.

B. At the Owner's request, or with the Owner's approval, the Architect may approve the Contractor's Request in writing, but delay the issuance of the associated Change Order, pending other outstanding items to be included in the Change Order. Such delay, shall not be considered detrimental to the Contractor.

END OF SECTION 012610

SECTION 012900 – CONTRACT PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for preparation and processing of the Contractor's Certificate and Application(s) For Payment.

1.2 RELATED DOCUMENTS

A. Drawings

B. Project Manual and Specifications

C. General Conditions and Supplementary Conditions (if applicable).

D. Other special instructions or requirements, contained within Division 1.

E. Refer to Division 1 Section 012100 "Allowances" for procedural and administrative requirements for handling and processing allowances.

F. Refer to Division 1 Section 012300 "Alternates and Unit Prices" for procedural and administrative requirements for using unit prices.

G. Refer to Division 1 Section 012600 "Contract Modification Procedures" for procedural and administrative requirements for changes to the Contract Amount and Contract Time.

1.3 DEFINITIONS

A. Contractor's Application for Payment: A standardized form, provided by the Owner and utilized by the Contractor, for requesting payment from the Owner for Work in place, or Materials properly stored on site.

1. The Contractor's Application for Payment shall provide a detailed recap of the Original Contract Sum, any changes to the Contract Amount by Change Orders, the revised Contract Sum to Date, any Materials Stored on Site, the Total Completed and Stored To Date, the Retainage withheld, the Total Earned Less Retainage, the Previous Payments to the Contractor, the Current Payment Due to the Contractor, and the Balance to Finish Including Retainage.

2. The Application For Payment shall incorporate the Schedule of Values, as the basis for payment of the Work Completed To Date, and Materials Stored On Site, as further described below.

3. Schedule of Values: A detailed listing of the allocation of costs for the various portions or component parts of the project, and totaling the Contract Sum. The Schedule of Values will be used as the basis for reviewing and approving the Contractor's Application for Payment, therefore, the Schedule of Values will include sufficient detail that the Architect can readily review, approve, and substantiate to the Owner that the Contractor's request for payment is generally in line with the Work Completed to Date, as well as the Materials Stored on Site.

1.4 FORMAT FOR PAYMENT REQUESTS

A. The form to be utilized for payment request will be the American Institute of Architects, AIA Form G702 "Application and Certificate For Payment", and AIA Form G703 "Continuation Sheet". A copy of the form is attached for reference. NO OTHER FORM WILL BE ACCEPTED.

1. 4 original, signed, and notarized copies of the Application and Certificate for Payment shall be required each month.

2. All 4 copies of the Application and Certificate for Payment shall be signed and sealed by a Notary Public, duly registered in the State of Louisiana.

3. The original, signed, and notarized copies of the Application and Certificate for Payment shall be delivered to the office of the Architect, no later than the last day of the month, for which the Contractor is requesting payment. Within 7 days, the Architect will review and either:

a. Certify the request for payment, and forward to the Owner with his recommendation to process and pay the request.
b. Notify the Contractor of questions or concerns which will require revision or additional information, prior to making a recommendation to the Owner.

B. The Continuation Sheet shall contain a detailed breakdown of the costs associated with the project, by Specification Section, and/or portion of the work, in order to allow for a detailed review and approval of the materials and labor that the Contractor is requesting payment for. BREAKDOWN BY SPECIFICATION DIVISON WILL NOT BE ACCEPTABLE.

1. Refer to the (2) attached sample Application and Certificate for Payment with Continuation Worksheets, for reference. Specific line items may be modified as is applicable to the project.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Unless the Owner requires a proprietary standardized form of Application For Payment, AIA Document G702 "Application And Certificate For Payment" shall be utilized, with AIA Document G703 "Application For Payment - Continuation Sheet" attached to include the items contained within the Schedule of Values.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

E. Transmittal: Submit three (6) signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).

4. Copies of building permits, where applicable.

G. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designed portions of the Work.

H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Updated final statement, accounting for final changes to the Contract Sum.
3. Evidence that claims have been settled (No-lien certificate).
4. Final, liquidated damages settlement statement.

1.5 SCHEDULE OF VALUES

A. Coordination: **Submit the Schedule of Values to the Architect for review and approval, at the earliest possible date, but in no case later than 14 days prior to preparing and submitting the first Application for Payment**.

1. No Application for Payment will be reviewed or processed by the Architect, prior to approval of the Contractor's proposed Schedule of Values.

2. Refer to the attached Sample Schedule(s) of Values for representative examples and level of detailed breakdown that shall be considered acceptable.

3. As required by the Insurance Company, the Schedule of Values shall provide a separate breakdown for each Building Area, as noted and indicated on the Drawings and Key Plan, with the appropriate division of costs for each area by Specification Section and Item. The Contractor and all Subcontractors and Material Suppliers shall endeavor to provide an accurate breakdown of costs for each.

B. Format: Unless the Owner requires a proprietary standardized form of Application For Payment, AIA Document G702 "Application And Certificate For Payment" shall be utilized, with AIA Document G703 "Application For Payment - Continuation Sheet" attached to include the items contained within the Schedule of Values.

C. Content:

1. Arrange the Schedule of Values in tabular form, with separate columns to include the following:

    a. Item Number
    b. Description of Work
    c. Value
    d. Work Completed From Previous Application
    e. Work Completed This Period
    f. Materials Presently Stored
    g. Total Completed and Stored To Date
    h. Percentage Complete
    i. Balance To Finish
    j. Retainage

2. Provide breakdown of the Contract Sum in sufficient detail to facilitate initial and ongoing evaluation, review, and approval of the Contractor's Application For Payment, relative to the progress observed at the project site.

3. The Schedule of Values shall include a minimum of one line item for each Specification, Section, Item, Product Category, or Trade, however, large or complex trades or areas of work, or subcontract work incorporating second-tier subcontractors shall be broken-down into multiple sub-categories, in order to facilitate review and approval.

For example:	Metal Stud Framing	$$$$$
	Sheetrock & Accessories	$$$$$
	Firestopping	$$$$$
	Acoustical Ceilings	$$$$$
	Plumbing - Rough-In	$$$$$
	Plumbing - Top-Out	$$$$$
	Plumbing - Equipment	$$$$$
	Plumbing - Fixtures	$$$$$
	Electrical - Below Grade	$$$$$
	Electrical - Above Grade	$$$$$
	Electrical - Site	$$$$$
	Electrical - Gear & Equipment	$$$$$
	Electrical - Fixtures	$$$$$
	Electrical - Fire Alarm	$$$$$
	Electrical - Security System	$$$$$

4. Round line item values to the nearest whole dollar, the total of which shall equal the original or revised (if applicable) Contract Sum.

5. Stored materials shall be indicated for each line item, in the appropriate column, until incorporated into the work.

    a. Differentiate between items stored on-site and items stored off-site, if allowable by the Owner.
    b. Include evidence to substantiate the value of such items, such as invoices, as is appropriate.
    c. Include evidence to substantiate that items stored off-site are insured or stored in a bonded warehouse, if allowable by the Owner.

6. Temporary facilities, utilities, security measures, and similar cost items that are not directly incorporated into the Work may be shown either as separate line items, or included together as General Conditions, at the Contractor's option.

7. Upon issuance of a Change Order by the Architect, and execution by all parties, the work contained within the Change Order shall be added to the Contract Sum, as well as the Schedule of Values, with the heading "Change Order No. #" with an associated dollar value of $0.00. The heading "Change Order No. #" shall be accompanied by a listing of the individual items comprising the Change Order as separate line items, with the appropriate associated value for each.

8. Individual items contained within each Change Order shall be billed separately.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

AIA® Document G703™ – 1992

To: [redacted] From Contractor: [redacted]

Continuation Sheet

AIA Document G702™, Application and Certification for Payment, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

Project: [redacted]

APPLICATION NO: 3 Page 2 of 5
APPLICATION DATE: 1/17/2011
PERIOD TO: 12/31/2010
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (Not in D or E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (If variable rate)
1.	BOND	54,350.00	0.00	54,350.00	0.00	54,350.00	100	0.00	2,717.50
2	INSURANCE	44,710.00	0.00	44,710.00	0.00	44,710.00	100	0.00	2,235.50
3	PERMITS	9,810.00	0.00	9,810.00	0.00	9,810.00	100	0.00	490.50
4	GENERAL CONDITIONS	467,000.00	90,400.00	49,700.00	0.00	140,100.00	30	326,900.00	7,005.00
5	SURVEYOR	10,000.00	5,000.00	2,000.00	0.00	7,000.00	70	3,000.00	350.00
6.	SITEWORK	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
7	- Clearing, Excv., Fill, Grade	400,000.00	280,260.00	23,540.00	0.00	303,800.00	76	96,200.00	15,190.00
8	- Storm Drainage, Catch Basins	221,000.00	79,700.00	97,100.00	0.00	176,800.00	80	44,200.00	8,840.00
9	- Geo-Tex Fabric & Limestone	295,000.00	0.00	88,500.00	0.00	88,500.00	30	206,500.00	4,425.00
10	- Silt, Fencing, Etc.	10,000.00	5,000.00	2,000.00	0.00	7,000.00	70	3,000.00	350.00
11	TEMPORARY SITE FENCING	12,000.00	0.00	3,000.00	0.00	3,000.00	25	9,000.00	150.00
12	WOOD FENCING	8,900.00	0.00	0.00	0.00	0.00	0	8,900.00	0.00
13	HYDROSEEDING	6,000.00	0.00	0.00	0.00	0.00	0	6,000.00	0.00
14	TERMITE TREATMENT	2,000.00	0.00	2,000.00	0.00	2,000.00	100	0.00	100.00
15	CONCRETE	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
16	- Drilled Shafts	30,050.00	30,050.00	0.00	0.00	30,050.00	100	0.00	1,502.50
17	- Church Bldg. Found. & Slab	203,900.00	47,202.00	150,581.00	0.00	197,783.00	97	6,117.00	9,889.15
18	- Mezzanines, Towers	10,800.00	0.00	0.00	500.00	500.00	5	10,300.00	25.00
19	- Plaza, Walks, Site, Misc.	131,700.00	0.00	0.00	4,869.00	4,869.00	4	126,831.00	243.45
20	- Chiller Yard	47,200.00	0.00	0.00	0.00	0.00	0	47,200.00	0.00
21	DECORATIVE BOLLARDS	9,100.00	0.00	0.00	0.00	0.00	0	9,100.00	0.00
22	STRUC. STEEL, BAR JOIST, DECK	683,261.00	37,224.00	0.00	0.00	37,224.00	5	646,037.00	1,861.20
23	DRYWALL & ACOUSTICAL	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
24	- Metal Stud Framing	396,460.00	0.00	0.00	0.00	0.00	0	396,460.00	0.00
25	- Sheetrock/Sheathing	100,480.00	0.00	0.00	0.00	0.00	0	100,480.00	0.00
	GRAND TOTAL	3,153,721.00	574,836.00	527,291.00	5,369.00	1,107,496.00	35	2,046,225.00	55,374.80

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

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AIA® Document G703™ – 1992

To: [redacted] From Contractor: [redacted]

Continuation Sheet

AIA Document G702™, Application and Certification for Payment, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

Project: [redacted]

APPLICATION NO: 3 Page 3 of 5
APPLICATION DATE: 1/17/2011
PERIOD TO: 12/31/2010
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
			WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (Not in D or E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C − G)	RETAINAGE (If variable rate)
26	- Insulation	23,650.00	0.00	0.00	0.00	0.00	0	23,650.00	0.00
27	- Misc. Framing/Blocking	18,370.00	0.00	0.00	0.00	0.00	0	18,370.00	0.00
28	- Acoustical Ceilings	12,450.00	0.00	0.00	0.00	0.00	0	12,450.00	0.00
29	PLASTER/STUCCO	157,420.00	0.00	0.00	0.00	0.00	0	157,420.00	0.00
30	WATERPROOFING	95,000.00	0.00	0.00	0.00	0.00	0	95,000.00	0.00
31	ROUGH CARPENTRY	24,620.00	0.00	0.00	0.00	0.00	0	24,620.00	0.00
32	ROOFING	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
33	- Metal Roofing & Trims	67,900.00	0.00	0.00	0.00	0.00	0	67,900.00	0.00
34	- Built Up Roofing & Sht.Metal	39,000.00	0.00	0.00	0.00	0.00	0	39,000.00	0.00
35	- Roofing Hatches & Curbs	2,200.00	0.00	0.00	0.00	0.00	0	2,200.00	0.00
36	- Roof Insulation,Peel & Stick	40,100.00	0.00	0.00	0.00	0.00	0	40,100.00	0.00
37	PRE-FAB DOME UNITS	23,200.00	0.00	0.00	0.00	0.00	0	23,200.00	0.00
38	CAST STONE	348,650.00	0.00	0.00	0.00	0.00	0	348,650.00	0.00
39	GLASS & GLAZING	147,800.00	0.00	0.00	0.00	0.00	0	147,800.00	0.00
40	PAINTING	58,550.00	0.00	0.00	0.00	0.00	0	58,550.00	0.00
41	SONOSPRAY	38,400.00	0.00	0.00	0.00	0.00	0	38,400.00	0.00
42	FLOORING	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
43	-Porcelain Tile	145,200.00	0.00	0.00	0.00	0.00	0	145,200.00	0.00
44	-VCT	1,600.00	0.00	0.00	0.00	0.00	0	1,600.00	0.00
45	-Stone Tile	62,000.00	0.00	0.00	0.00	0.00	0	62,000.00	0.00
46	GRANITE TOPS	9,770.00	0.00	0.00	0.00	0.00	0	9,770.00	0.00
47	MILLWORK	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
48	-Wood Trim	149,700.00	0.00	0.00	0.00	0.00	0	149,700.00	0.00
49	-Cabinets	45,000.00	0.00	0.00	0.00	0.00	0	45,000.00	0.00
50	-Wood Doors & Frames	74,000.00	0.00	0.00	0.00	0.00	0	74,000.00	0.00
	GRAND TOTAL	4,738,301.00	574,836.00	527,291.00	5,369.00	1,107,496.00	23	3,630,805.00	55,374.80

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To: [redacted] From Contractor:

Continuation Sheet

AIA Document G702™, Application and Certification for Payment, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

Project: [redacted]

APPLICATION NO: 3 Page 4 of 5
APPLICATION DATE: 1/17/2011
PERIOD TO: 12/31/2010
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED: FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED: THIS PERIOD	MATERIALS PRESENTLY STORED (Not in D or E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C − G)	RETAINAGE (If variable rate)
51	HOLLOW METAL	2,490.00	0.00	0.00	0.00	0.00	0	2,490.00	0.00
52	FINISH HARDWARE	47,300.00	0.00	0.00	0.00	0.00	0	47,300.00	0.00
53	TOILET PARTITIONS	3,090.00	0.00	0.00	0.00	0.00	0	3,090.00	0.00
54	TOILET ACCESSORIES	5,780.00	0.00	0.00	0.00	0.00	0	5,780.00	0.00
55	FIRE EXT., CABS., DEF. CAB:	2,010.00	0.00	0.00	0.00	0.00	0	2,010.00	0.00
56	SIGNAGE	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
57	-Interior Room/Exit Signs	4,080.00	0.00	0.00	0.00	0.00	0	4,080.00	0.00
58	-Parking Signage	1,680.00	0.00	0.00	0.00	0.00	0	1,680.00	0.00
59	CURTAIN TRACKS	640.00	0.00	0.00	0.00	0.00	0	640.00	0.00
60	DECORATIVE GRILLES	4,900.00	0.00	0.00	0.00	0.00	0	4,900.00	0.00
61	BIRD SCREENS & TOWERS	7,950.00	0.00	0.00	0.00	0.00	0	7,950.00	0.00
62	INSTALL OWNER FURNISHED ITEMS	9,000.00	0.00	0.00	0.00	0.00	0	9,000.00	0.00
63	PLUMBING	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
64	-Site Util/Sewer, Water, Fire	150,400.00	76,456.00	36,344.00	0.00	112,800.00	75	37,600.00	5,640.00
65	-Church Bldg. - Rough In Slab	19,300.00	0.00	19,300.00	0.00	19,300.00	100	0.00	965.00
66	-Church Bldg. - T.O.	34,800.00	0.00	0.00	0.00	0.00	0	34,800.00	0.00
67	-Church Bldg. - Fixtures	23,200.00	0.00	0.00	0.00	0.00	0	23,200.00	0.00
68	SPRINKLER	49,900.00	0.00	0.00	0.00	0.00	0	49,900.00	0.00
69	HVAC	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
70	-Piping, Pumps, Etc.	149,500.00	0.00	0.00	0.00	0.00	0	149,500.00	0.00
71	-Equipment	155,000.00	0.00	0.00	0.00	0.00	0	155,000.00	0.00
72	-Ducts & Grilles	144,000.00	0.00	0.00	0.00	0.00	0	144,000.00	0.00
73	-Insulation	55,000.00	0.00	0.00	0.00	0.00	0	55,000.00	0.00
74	-Controls	65,000.00	0.00	0.00	0.00	0.00	0	65,000.00	0.00
75	Air/Water Balance	20,500.00	0.00	0.00	0.00	0.00	0	20,500.00	0.00
	GRAND TOTAL	5,693,821.00	651,292.00	582,935.00	5,369.00	1,239,596.00	22	4,454,225.00	61,979.60

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To: [redacted] From Contractor: [redacted] C.

Continuation Sheet

AIA Document G702™, Application and Certification for Payment, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

Project: [redacted]

APPLICATION NO: 3 Page 5 of 5
APPLICATION DATE: 1/17/2011
PERIOD TO: 12/31/2010
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
			WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (Not in D or E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C − G)	RETAINAGE (If variable rate)
76	ELECTRICAL	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
77	-Electrical Service	12,000.00	0.00	7,000.00	0.00	7,000.00	58	5,000.00	350.00
78	-Site Electrical	18,000.00	0.00	8,000.00	0.00	8,000.00	44	10,000.00	400.00
79	-Gear & Distribution	47,000.00	0.00	0.00	0.00	0.00	0	47,000.00	0.00
80	-Rough In - Church Slab/Walls	122,000.00	0.00	10,000.00	0.00	10,000.00	8	112,000.00	500.00
81	-Trim Out	39,800.00	0.00	0.00	0.00	0.00	0	39,800.00	0.00
82	-Fixtures	365,400.00	0.00	0.00	0.00	0.00	0	365,400.00	0.00
83	Fire Alarm	35,000.00	0.00	0.00	0.00	0.00	0	35,000.00	0.00
84	-Lighting Protection	12,600.00	0.00	0.00	0.00	0.00	0	12,600.00	0.00
85	CONTINGENCY ALLOWANCE	150,000.00	0.00	0.00	0.00	0.00	0	150,000.00	0.00
86	CHANGE ORDER NO. 1 (Pending)	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
87	- Add Sinks @ Restrooms	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
88	- Add Piping @ Ent. Drives	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
89	- Add Irrigation Water Main	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
90	- Deduct Builder's Risk Ins.	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
91	CHANGE ORDER NO. 2 (Pending)	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
92	- Add Conc. Paving/Parking	54,831.00	0.00	0.00	54,831.00	54,831.00	100	0.00	2,741.55
93	- Add Porte Cochere	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
94	- Deduct Builders Risk Ins.	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00
	GRAND TOTAL	6,550,452.00	651,292.00	607,935.00	60,200.00	1,319,427.00	20	5,231,025.00	65,971.35

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PAYMENT APPLICATION DETAILS

Customer: [redacted]
Project: [redacted]

Application Number: 3
For Period Ending: 05/31/2014

A	B	C	D	E	F	G		H	I
			Work Completed		Materials	Completed			
Item Number	Description	Scheduled Value	From Previous Application	This Period Value	Presently Stored	and Stored To Date	Total %	Balance To Finish	Retainage Value
01200	Bond	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01292	Building Permit	3,419.00	3419.00	0.00	0.00	3419.00	100.00	0.00	170.95
01300	Supervision	40,400.00	6354.92	3,211.80	0.00	9566.72	23.68	30,833.28	478.34
01316	Layout Survey	2,728.00	2728.00	0.00	0.00	2728.00	100.00	0.00	136.40
01319	Mobilization	330.00	330.00	0.00	0.00	330.00	100.00	0.00	16.51
01422	Builder Risk	4,946.00	1119.28	321.00	0.00	1440.28	29.12	3,505.72	72.01
01424	OCP Policy	824.00	824.00	0.00	0.00	824.00	100.00	0.00	41.20
01426	Dumpster	1,649.00	373.99	363.94	0.00	737.93	44.75	911.07	36.90
01430	General Cleanup	2,688.00	0.00	285.47	0.00	285.47	10.62	2,402.53	14.27
01440	Final Cleanup	967.00	0.00	0.00	0.00	0.00	0.00	967.00	0.00
01500	Project Sign	915.00	0.00	915.00	0.00	915.00	100.00	0.00	45.75
01510	Temporary Utilities	3,023.00	0.00	520.00	0.00	520.00	17.20	2,503.00	26.00
01522	Field Offices & Sheds	880.00	0.00	0.00	0.00	0.00	0.00	880.00	0.00
01542	Construction Equipment	2,060.00	1564.57	0.00	0.00	1564.57	75.95	495.43	78.23
01560	Temporary Barriers	566.00	566.00	0.00	0.00	566.00	100.00	0.00	28.30
01800	Fuel/Travel	4,617.00	444.16	310.72	0.00	754.88	16.35	3,862.12	37.75
01910	Allowances	27,479.00	0.00	0.00	0.00	0.00	0.00	27,479.00	0.00

PAYMENT APPLICATION DETAILS

Customer: [redacted]
Project: [redacted]

Application Number: 3
For Period Ending: 05/31/2014

A	B	C	D	E	F	G		H	I
			Work Completed		Materials Presently Stored	Completed and Stored To Date	Total %	Balance To Finish	Retainage Value
Item Number	Description	Scheduled Value	From Previous Application	This Period Value					
02300	Earthwork	68,100.00	56305.08	7,470.57	0.00	63775.65	93.65	4,324.35	3,188.78
02752	Pavement Concrete	34,723.00	0.00	0.00	0.00	0.00	0.00	34,723.00	0.00
02755	Paving Forms & Accessories	3,828.00	0.00	0.00	0.00	0.00	0.00	3,828.00	0.00
02760	Paving Labor & Equipment	3,070.00	0.00	0.00	0.00	0.00	0.00	3,070.00	0.00
02770	Joint Sealents	4,961.00	0.00	0.00	0.00	0.00	0.00	4,961.00	0.00
02785	Paving Striping	274.00	0.00	0.00	0.00	0.00	0.00	274.00	0.00
02800	Trench Drains	358.00	0.00	0.00	0.00	0.00	0.00	358.00	0.00
02820	Fences & Gates	1,600.00	0.00	0.00	0.00	0.00	0.00	1,600.00	0.00
02840	Concrete Parking Bumpers	2,215.00	0.00	0.00	0.00	0.00	0.00	2,215.00	0.00
02890	Handicap Signs	300.00	0.00	0.00	0.00	0.00	0.00	300.00	0.00
02920	Landscaping	1,560.00	0.00	0.00	0.00	0.00	0.00	1,560.00	0.00
02955	Pipe Bollards	4,465.00	0.00	3,376.88	0.00	3376.88	75.63	1,088.12	168.84
03050	Drilled Shafts	15,220.00	15220.00	0.00	0.00	15220.00	100.00	0.00	761.00
03100	Foundation Forming Materials	3,180.00	3180.00	0.00	0.00	3180.00	100.00	0.00	159.00
03110	Foundation Labor & Equipment	56,056.00	23470.65	32,585.35	0.00	56056.00	100.00	0.00	2,802.80
03200	Concrete Reinforcement	20,960.00	13781.20	7,178.80	0.00	20960.00	100.00	0.00	1,048.00
03300	Foundation Concrete	25,970.00	25970.00	0.00	0.00	25970.00	100.00	0.00	1,298.50

PAYMENT APPLICATION DETAILS

Customer: [redacted]
Project: [redacted]

Application Number: 3
For Period Ending: 05/31/2014

A	B	C	D	E	F	G		H	I
			Work Completed		Materials	Completed			
Item Number	Description	Scheduled Value	From Previous Application	This Period Value	Presently Stored	and Stored To Date	Total %	Balance To Finish	Retainage Value
03310	Concrete Pumping	3,070.00	3070.00	0.00	0.00	3070.00	100.00	0.00	153.50
03540	Termite Treatment	420.00	420.00	0.00	0.00	420.00	100.00	0.00	21.00
03700	Rub Concrete	9,150.00	0.00	0.00	0.00	0.00	0.00	9,150.00	0.00
04200	Masonry Units	14,790.00	0.00	0.00	0.00	0.00	0.00	14,790.00	0.00
04410	Masonry Lintels	955.00	0.00	0.00	0.00	0.00	0.00	955.00	0.00
04500	Block Fill	1,000.00	0.00	0.00	0.00	0.00	0.00	1,000.00	0.00
04720	Cast Stone	12,800.00	0.00	0.00	0.00	0.00	0.00	12,800.00	0.00
04800	Masonry Accessories	3,950.00	0.00	0.00	0.00	0.00	0.00	3,950.00	0.00
04810	Mortar & Sand	4,140.00	0.00	0.00	0.00	0.00	0.00	4,140.00	0.00
04850	Masonry Caulking	615.00	0.00	0.00	0.00	0.00	0.00	615.00	0.00
04920	Masonry Labor	30,000.00	0.00	0.00	0.00	0.00	0.00	30,000.00	0.00
05090	Anchor Bolts	3,150.00	3150.00	0.00	0.00	3150.00	100.00	0.00	157.50
06100	Rough Carpentry Materials	52,150.00	35628.88	16,521.12	0.00	52150.00	100.00	0.00	2,607.50
06110	Rough Carpentry Labor	45,200.00	4949.40	22,554.80	0.00	27504.20	60.85	17,695.80	1,375.21
06220	Millwork	77,870.00	0.00	0.00	0.00	0.00	0.00	77,870.00	0.00
06415	Countertops	6,120.00	0.00	0.00	0.00	0.00	0.00	6,120.00	0.00
07210	Building Insulation	9,420.00	0.00	0.00	0.00	0.00	0.00	9,420.00	0.00

PAYMENT APPLICATION DETAILS

Customer: [redacted]
Project: [redacted]

Application Number: 3
For Period Ending: 05/31/2014

A	B	C	D	E	F	G		H	I
			Work Completed		Materials Presently Stored	Completed and Stored To Date	Total %	Balance To Finish	Retainage Value
Item Number	Description	Scheduled Value	From Previous Application	This Period Value					
07260	Vapor Retarders	5,114.00	0.00	0.00	0.00	0.00	0.00	5,114.00	0.00
07310	Roofing	35,600.00	0.00	0.00	0.00	0.00	0.00	35,600.00	0.00
07460	Siding	8,400.00	0.00	0.00	0.00	0.00	0.00	8,400.00	0.00
07840	Firestopping	5,000.00	0.00	0.00	0.00	0.00	0.00	5,000.00	0.00
07900	Joint Sealers	1,550.00	0.00	0.00	0.00	0.00	0.00	1,550.00	0.00
08100	Metal Doors & Frames	15,750.00	0.00	0.00	0.00	0.00	0.00	15,750.00	0.00
08210	Wood Doors	11,420.00	0.00	0.00	0.00	0.00	0.00	11,420.00	0.00
08310	Access Doors & Panels	4,600.00	0.00	0.00	0.00	0.00	0.00	4,600.00	0.00
08500	Windows	15,800.00	0.00	0.00	0.00	0.00	0.00	15,800.00	0.00
08700	Hardware	9,700.00	0.00	0.00	0.00	0.00	0.00	9,700.00	0.00
09100	Drywall	58,650.00	0.00	0.00	0.00	0.00	0.00	58,650.00	0.00
09130	Acoustical Suspended Ceiling	15,935.00	0.00	0.00	0.00	0.00	0.00	15,935.00	0.00
09600	Flooring	27,121.00	0.00	0.00	0.00	0.00	0.00	27,121.00	0.00
10100	Visual Display Boards	700.00	0.00	0.00	0.00	0.00	0.00	700.00	0.00
10260	Wall & Corner Guards	1,710.00	0.00	0.00	0.00	0.00	0.00	1,710.00	0.00
10400	Signs	6,100.00	0.00	0.00	0.00	0.00	0.00	6,100.00	0.00
10420	Plaques	3,670.00	0.00	0.00	0.00	0.00	0.00	3,670.00	0.00

PAYMENT APPLICATION DETAILS

Customer: [redacted]
Project: [redacted]

Application Number: 2
For Period Ending: 04/30/2014

A	B	C	D	E	F	G		H	I
			Work Completed		Materials	Completed			
Item Number	Description	Scheduled Value	From Previous Application	This Period Value	Presently Stored	and Stored To Date	Total %	Balance To Finish	Retainage Value
10520	Fire Protection Specialties	1,000.00	0.00	0.00	0.00	0.00	0.00	1,000.00	0.00
10810	Toilet Accessories	10,500.00	0.00	0.00	0.00	0.00	0.00	10,500.00	0.00
11400	Food Service Equipment	4,500.00	0.00	0.00	0.00	0.00	0.00	4,500.00	0.00
15400	Plumbing	108,790.00	0.00	27,325.40	0.00	27325.40	25.12	81,464.60	1,366.27
15700	Heating, Ventilating & Air Conditioning	93,000.00	0.00	0.00	0.00	0.00	0.00	93,000.00	0.00
16500	Electrical	173,650.00	0.00	9,099.26	0.00	9099.26	5.24	164,550.74	454.96
	TOTAL:	1,237,391.00	76,107.95	163,185.84	0.00	239293.79	19.34	998,097.21	11,964.69

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on
Project including, but not limited to, the following:

1. Coordination
2. Project meetings
3. Submittals
4. Postings

1.2 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.

5. Progress meetings.
6. Pre-Construction and Pre-Installation conferences.
7. Project closeout activities

1.3 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Pre-Construction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 7 days after execution of the Agreement. Hold the conference at Project site.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Utilize Agenda provided by the **Beauregard Parish School Board**, if applicable.

Additional items of discussion will include items of significance that could affect progress, including, but not limited to the following:

a. Tentative construction schedule.
b. Phasing.
c. Critical work sequencing and long-lead items.
d. Designation of key personnel and their duties.
e. Procedures for processing field decisions and Change Orders.
f. Procedures for requests for information. (RFIs).
g. Procedures for testing and inspecting.
h. Procedures for processing Applications for Payment.
i. Submittal procedures.
j. Work restrictions.
k. Owner's occupancy requirements.
l. Responsibility for temporary facilities and controls.
m. Parking availability.

n. Office, work, and storage areas.
o. Equipment deliveries and priorities.
p. Security.
q. Labor compliance for state building repairs.

3. Minutes: Architect will record and distribute meeting minutes.

C. Progress Meetings: Conduct progress meetings at weekly intervals on a day and time to be determined, unless otherwise scheduled by the Architect. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1. Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1. Interface requirements.
2. Sequence of operations.
3. Status of submittals.
4. Deliveries.
5. Off-site fabrication.
6. Access.
7. Site utilization.
8. Temporary facilities and controls.
9. Work hours.
10. Hazards and risks.
11. Progress cleaning.
12. Quality and work standards.
13. Status of correction of deficient items.

14. Field observations.
15. Requests for interpretations (RFIs).
16. Status of proposal requests.
17. Pending changes.
18. Status of Change Orders.
19. Pending claims and disputes.
20. Documentation of information for payment requests.

3. Minutes: Contractor shall be responsible for recording and distributing the meeting minutes.

4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

   a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.4 POSTINGS

A. If applicable, the wage decision for the project and/or the Project Wage Rate Determination Sheet shall be posted at the worksite in a prominent location, readily accessible to all employees, for the duration of construction.

B. All posters required by law shall be posted at the jobsite including, but not limited to, the "Federal Minimum Wage", “Notice to All Employees Working on Federal or Federally Financed Construction Projects”, and “Equal Opportunity is the Law.”

Refer to Federal, State, and Local requirements for additional information and/or posters that may be required to be posted.

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Contractor's Construction Schedule.
2. Submittals Schedule.
3. Daily construction reports.
4. Field condition reports.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Float: The measure of leeway in starting and completing an activity.

E. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

F. Major Area: A story of construction, a separate building, or a similar significant construction element.

1.3 SUBMITTALS

A. Submittal Schedule: Submit three copies of the Submittal schedule. Arrange the following information in a tabular format:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect's final release or approval.

B. Contractor's Construction Schedule: Submit three opaque copies of initial schedule, large enough to show the entire schedule for entire construction period.

1. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.
2. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
3. Define preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.

C. Daily Construction Reports: Submit three copies at **weekly** intervals.

D. Field Condition Reports: Submit three copies at time of discovery of differing conditions.

1.4 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTAL SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittal Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Acceptance.

1. Contract completion date shall not be changed by submission of a schedule that shows an early or late completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than **28** days, unless specifically allowed by Architect.
2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
    a. List delivery dates of major items of word or pieces of equipment separately, as milestones.
3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
4. Startup and Testing Time: Include days required for startup and testing.
5. Acceptance: Indicate completion in advance of date established for Acceptance, and allow time for Architect's administrative procedures necessary for certification of Acceptance.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use of premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

5. Work Stages: Indicate important stages of construction for each major portion of the Work.
6. Other Constraints, as may be applicable to the Project.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Acceptance, Final Completion, delivery dates of major items and critical pieces of equipment, and other significant dates, as may be applicable to the completion of the Project.

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within **30** days of date established for **the Notice to Proceed**. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For each construction activity, indicate an estimated completion percentage in percent increments within time bar.
2. Indicate each milestone event with a unique symbol, having a duration of 0 days or 1 day.

3. Indicate at the left side of each activity bar or milestone symbol the Estimated/Actual Start Date.

4. Indicate at the right of each activity bar or milestone symbol the Task Name.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. Provide a cash requirement prediction (cash flow analysis) based on indicated activities, if required by the Owner.

C. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized, cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than **30** days after date established for **the Notice to Proceed**.

a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.

2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.

3. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

a. Preparation and processing of submittals.
b. Mobilization and demobilization.
c. Purchase of materials.
d. Delivery.
e. Fabrication.
f. Utility interruptions.
g. Installation.
h. Work by Owner that may affect or be affected by Contractor's activities.
i. Testing and commissioning.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.

4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

    a. Sub-networks on separate sheets are permissible for activities clearly off the critical path.

E. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Principal events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.

F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

2.5 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. Equipment at Project site.
3. Material deliveries.
4. High and low temperatures and general weather conditions.
5. Accidents.
6. Stoppages, delays, shortages, and losses.
7. Meter readings and similar recordings.
8. Orders and requests of authorities having jurisdiction.
9. Services connected and disconnected.
10. Equipment or system tests and startups.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation, if necessary. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At no more than **monthly** intervals, update schedule to reflect actual construction progress and activities. Issue schedule **one week** before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

C. **Each month, an updated schedule, reflecting the progress of the Project as of the last day of the Month, shall be included with the Contractor's Request and Application for Payment. The Contractor's Request and Application for Payment will not be reviewed and processed if not accompanied by the required updated Schedule.**

END OF SECTION 013200

SECTION 013231 - PRE-CONSTRUCTION DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Pre-Construction photographs and/or video.

B. See Division 1 Section "Closeout Procedures" for submitting digital media as part of Project Record Documentation at Project closeout.

1.2 SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.

B. Construction Photographs: Submit electronic copies of each photographic view within **seven** days of taking photographs.

1. Identification: On back of each photo, or as part of electronic documents, provide an applied label or rubber-stamped impression with the following information:

a. Name of Project.
b. Name and address of photographer.
c. Name of Architect.
d. Name of Contractor.
e. Date photograph was taken if not date stamped by camera.
f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
g. Unique sequential identifier.

2. Digital Images: Submit a complete set of digital image electronic files to the Owner and to the Architect, separately, via Portable Thumb Drive. Identify electronic media with date photographs and/or videos were taken. Submit images that have same aspect ratio as the sensor, uncropped.

3. Image Requirements: Provide sufficient photographs and/or video to fully and sufficiently document all existing conditions, including any and all existing damage, which may be necessary to substantiate conditions pre-dating the Contractor's mobilization on-site. Provide temporary lighting, if required, to produce clear, well-lit photographs without obscuring shadows.

1.3 COPIES

A. Provide the Owner, 1 original, unaltered, dated copy for file purposes.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in uncompressed TIFF or JPG format produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than **1600 by 1200** pixels.

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION PHOTOGRAPHS AND/OR VIDEO

A. Preconstruction Photographs and/or Video: **Prior to mobilization on site** (before commencement of demolition, excavation or construction operations)] take color digital photographs and/or video of the Project site, existing structures, paving, walks, etc., including all existing items to remain during construction, as well as the surrounding properties, from different vantage points, as directed by the Architect and/or Owner.

1. **Flag construction limits before taking construction photographs.**
2. **Take photographs or video as required to show existing conditions adjacent to property before starting the Work.**
3. **Take photographs or video of existing buildings or other structures, either on or adjoining the site, to accurately record physical conditions at start of construction.**
4. **Specifically document any existing damages, or other conditions, to indicate that those items were existing prior to mobilization of the Contractor on site, and/or start of work at the site.**

END OF SECTION 013231

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. See Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule.

C. See Division 1 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.

D. See Division 1 Section "Closeout Procedures" for submitting warranties.

E. See Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.

F. See Division 1 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.

G. See Division 1 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action.

1. Submittals may be rejected for not complying with requirements of the Specifications and/or Drawings.

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Submittal Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

C. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

1. Initial Review: **Allow no less than 21 days for initial review of each submittal.** The Contractor shall allow additional time if coordination with subsequent submittals is required. Architect will advise the Contractor when a submittal being processed must be delayed for coordination.
2. Preliminary or Intermediate Review: If a preliminary or intermediate submittal is necessary, process it in same manner as for initial submittal.
3. Re-submittal Review: **Allow no less than 28 days for review of each re-submittal.**

D. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form.

1. Transmittal Form: The Contractor may utilize their standard transmittal form to transmit documents to the Architect. Each set of information submitted shall include a Cover Sheet incorporating the information required in Section 1.3.D.

E. **Number of Copies: Submit all submittals to the Architect, in electronic (PDF) format. For submittals of large format or requiring physical samples or color samples, the Contractor shall provide up to six (6) original copies, as required by the Architect.** The Architect and his Consultants will retain copies in sufficient quantities for file and distribution. Additional copies may be submitted by the Contractor, Subcontractor, or Suppliers as required for file and field distribution.

F. Identification: Each copy of each submittal shall include a Cover Sheet, providing the following information:

1. **Include the following information on Cover Sheet for processing and recording action taken:**

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address of Contractor.

e. Name and address of Subcontractor.
f. Name and address of Supplier.
g. Name of Product Manufacturer.
h. Submittal number or other unique identifier, including revision identifier.

1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01).

2) Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).

i. Number and title of appropriate Specification Section.
j. Drawing number and detail references, as appropriate.
k. Location(s) where product is to be installed, as appropriate.
l. Other necessary identification.

2. **Provide a space approximately 6 by 8 inches on the Cover Sheet to record Contractor's review and approval markings and action taken by Architect.**

G. Deviations: Highlight, encircle, or otherwise clearly note all identify deviations from the Contract Documents on submittals.

H. Items requiring the Architects response: Highlight, encircle, or otherwise clearly note all items requiring specific response from the Architect, such as: Options, Finishes, Color Selections, or other items

I. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.

J. Submittal Review:

1. **Submittals received directly from sources other than through the Contractor (i.e. - material supplier or subcontractor), may be returned to the Contractor, without review by the Architect.**
2. **Submittals forwarded to the Architect other than as indicated herein, or without the proper format may be returned to the Contractor, without review by the Architect.**
3. **Submittals forwarded to the Architect which have not been thoroughly reviewed and coordinated by the Contractor, including all items coordinated and dimensions verified, and with deviations and variations clearly noted, shall be returned marked "Revise & Resubmit".**

4. **Submittals or re-submittals requiring coordination with the work of other trades, shall be submitted in sequence, so that the necessary coordination shall be completed by the Contractor, prior to submitting to the Architect for review.**
5. **Submittals or re-submittals requiring coordination with the work of other trades, but forwarded for review out-of-sequence, shall be returned "Revise & Resubmit".**
6. **Re-submittals returned to the Architect for review which have not addressed ALL of the previously noted or requested items shall be returned to the Contractor without review, or noted "Revise & Resubmit".**
7. **Resubmittal shall be required until the returned submittal is marked either "Approved", or "Approved As Noted."**
8. **NOTE: Submittals that require review by the Architect more than two (2) times, shall be subject to assessment of additional review fees by the Architect. These charges shall be assessed at the Architect's standard hourly and/or overtime rate(s), and shall be at the sole expense of the Contractor. The Architect shall submit invoice for additional hourly fees for additional submittal reviews to the Owner, and those amount(s) shall be deducted from the Contractor's payment by the Owner.**

K. Resubmittals: Make resubmittals in same form and number of copies as initial submittal, unless noted otherwise.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. **Re-submittals returned to the Architect for review which have not addressed ALL of the previously noted or requested items shall be returned to the Contractor without review, or noted "Revise & Resubmit".**
4. **Resubmittal shall be required until the returned submittal is marked either "Approved", or "Approved As Noted."**

L. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

M. Use for Construction: Use only final submittals with mark indicating "Approved" or "Approved As Noted" taken by Architect.

N. Field File Copies: Maintain in the Project Field Office a file, organized by specification section, complete with at least one clean copy of all Submittals noted "Approved" or "Approved As Noted", for use by the Architect, Engineers, and Owner. These copies will be in addition to those maintained on the Project site for Field Use.

O. Project Closeout: Clean original copies or photocopies of all submittals will be required to be included in the Operation and Maintenance Manuals, organized by Specification Section, for all items provided for or installed in the Project.

1.4 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: At Contractor's written request, copies of Architect's CAD files may be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:

1. If acceptable to the Architect and/or Engineer, the Contractor or Subcontractor will be required to sign an Electronic Document Release Form prepared by the Architect and/or Engineer, releasing the Architect and/or Engineer from any and all liability, which potentially may arise from the use of the Architect's drawings in the preparation of Shop Drawings, Working Drawings, or other submittals or documents, relating to the project.

2. Should the Contractor or Subcontractor refuse to sign the required document, without condition or exception, the requested files will not be provided for use.

3. Upon executing the document, the Contractor or Subcontractor agrees that the documents provided are for the sole use and benefit of the party requesting the documents, and for use only in association with the performance of this Contract. The documents provided may not be used in association with any other project, duplicated, or provided or distributed to any other party(s), under penalty of law.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's written recommendations.
b. Manufacturer's product specifications.
c. Manufacturer's installation instructions.
d. Manufacturer's catalog cuts.
e. Wiring diagrams showing factory-installed wiring.

f. Printed performance curves.
g. Operational range diagrams.
h. Compliance with specified referenced standards.
i. Testing by recognized testing agency.

4. **Number of Copies: Submit all submittals to the Architect, in electronic (PDF) format. For submittals of large format or requiring physical samples or color samples, the Contractor shall provide up to six (6) original copies, as required by the Architect.**

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal of Architect's CAD Drawings is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Notation of coordination requirements.
j. Notation of dimensions established by field measurement.
k. Relationship to adjoining construction clearly indicated.
l. Seal and signature of professional engineer if specified.
m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (750 by 1000 mm).
3. **Number of Copies: Submit all submittals to the Architect, in electronic (PDF) format. For submittals of large format or requiring physical samples or color samples, the Contractor shall provide up to six (6) original copies, as required by the Architect.**

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

a. Number of Samples: Submit no less than two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will retain 1 sample set; remainder will be returned.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: no less than 2 sets of Samples. Architect will retain one Sample sets; remainder will be returned.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.

F. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

G. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."

H. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."

I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Number of Copies: Submit one copy of the subcontractor list, unless otherwise indicated.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit no less than 6 copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data."

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Statement on condition of substrates and their acceptability for installation of product.
2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

U. Construction Photographs and Videotapes: Comply with requirements specified in Division 1 Section "Photographic Documentation" (IF APPLICABLE).

V. Material Safety Data Sheets (MSDS's): Submit information directly to Owner. Do not submit MSDS Sheets to the Architect. Maintain copies of MSDS's on the Project Site throughout the course of Construction, and include the same in the Project Closeout Documentation, Operation and Maintenance Manuals.

1. The Architect's review of Submittal Packages will specifically exclude the review of MSDS's which are included with submittals.

2.3 DELEGATED DESIGN SUBMITTALS

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a Design Certification Letter, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional. Refer to Specification Sections for individual requirements for submittals, drawings, technical data, design calculations, etc. specific to the Delegated-Design Submittal.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

C. Submittals forwarded to the Architect without the proper format, and/or which have not been thoroughly reviewed by the Contractor, including all items coordinated and dimensions verified, and with deviations and variations clearly noted, shall be returned to the Contractor, without review by the Architect.

D. NOTE: Submittals that require review by the Architect more than two (2) times, will be subject to assessment of additional review fees by the Architect. These charges will be assessed at the Architect's standard hourly rate, and shall be at the expense of the Contractor. The Architect shall submit invoice for additional hourly fees to the Owner, and the same will be deducted from the Contractor's payment by the Owner.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. "Approved Without Comment", "Approved As Noted", "Revise and Resubmit", "Rejected", or "Returned Without Review".

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

F. Refer to Part 1.3 "SUBMITTAL PROCEDURES", Subpart J "Submittal Review" above, for specific requirements and procedures for Submittals and Re-submittals.

END OF SECTION 013300

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. See Divisions 2 through 16 Sections for specific requirements for temporary heat, ventilation, and humidity control requirements for products in those Sections.

1.2 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 TEMPORARY UTILITIES & USE CHARGES

A. General: Unless otherwise specified herein, all utility costs or use charges for temporary facilities shall be included in the Contract Sum. The Contractor shall allow other entities to use temporary services and facilities without cost, including, but not limited to: the Owner's Representatives, Architect, Testing Agencies, and Authorities Having Jurisdiction.

B. **Temporary Water Service: Water from the Owner's existing water system WILL be available for the Contractor's use, without metering, and without payment of use charges.**

The Contractor shall provide connection to, and extension of, the Owner's existing water service, as required for construction operations. The Contractor shall make provisions to extend the Owner's existing water service for extended or remote areas of the site.

The Owner reserves the right to restrict or terminate the Contractor's use of Owner's water service at no charge, due to abuse or wanton waste.

In such case, provisions and payment for water for construction use will become the responsibility of the Contractor, and no Change to the Contract will be considered.

Where determined by the Contractor to be impractical or cost-prohibitive to extend the Owner's existing water service, the Contractor shall make other provisions for temporary water service, at no additional cost to the Owner.

C. **Temporary Electrical Power Service: Electric power from the Owner's existing electrical system WILL be available for the Contractor's use, without metering, and without payment of use charges.**

The Contractor shall provide connection to, and extension of, the Owner's existing electrical service, as required for construction operations. The Contractor shall make provisions to extend the Owner's existing electrical service for extended or remote areas of the site.

The Owner reserves the right to restrict or terminate the Contractor's use of Owner's electrical service at no charge, due to abuse or wanton waste.

In such case, payment for electrical service for construction use will become the responsibility of the Contractor, and no Change to the Contract will be considered.

Where determined by the Contractor to be impractical or cost-prohibitive to extend the Owner's existing electrical service, the Contractor shall make other provisions for temporary electrical service, at no additional cost to the Owner.

1.4 TEMPORARY FENCING

A. Provide temporary barricades as required by the Owner to maintain the safety of occupants, and the general public.

1. Provide rigid barricades, between work areas and occupant areas, including pedestrian walkways, building ingress/egress points, and driveways.

Rigid barricades shall be 6' high chain link fencing with ground-set posts, and continuous top and bottom tension wires or rails, as is required for the application.

Panel-type systems may be utilized in applications where debris screen is not required.

2. **At locations where occupants will be in close proximity to the work, provide opaque mesh screening, to protect occupants from debris, and to visually separate occupants and workers.**

3. **Flexible orange safety fencing may be used for material storage areas, or to direct vehicular or automobile traffic, or as a perimeter barricade around trees and/or other areas that are off limits to construction traffic.**

4. **Flexible orange safety fencing is not acceptable for separation of occupants from work areas.**

5. **No work shall commence on the site, until temporary barricades have been installed, inspected, and approved by the Owner.**

6. **The Owner reserves the right to stop the work at any time that barricades have been removed or damaged, as necessary to protect the safety of the Students, employees, or visitors.**

7. **No additional compensation will be made to the Contractor for work stoppages resulting from safety-related issues caused by the Contractor or his Subcontractors.**

1.5 SUBMITTALS

A. Site Plan

1. Prior to mobilization, provide a Site Plan, indicating proposed locations for temporary fencing, gates or other site access controls, construction area access, location of the job trailer, location of storage containers or trailers, locations of toilets and other temporary facilities, utility hookups, material storage and staging areas, parking areas for construction personnel, and all other pertinent information, for the Owner's approval and comment.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for the operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS (AS MAY BE APPLICABLE TO THE PROJECT)

A. Temporary Drives: Cement-Stabilized Soil, Limestone, Hot-Mix Asphalt Paving, or Concrete Pavement, as deemed necessary by the Contractor, or as specified to maintain access to areas as required by the Contract.

B. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high or 8 feet (2.4m) with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails.

C. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide galvanized steel bases for supporting posts.

D. Wood Enclosure Fence: Plywood, 8 feet (2.4 m) high, framed with four 2-by-4-inch (50-by-100-mm) rails or vertical studs, with preservative-treated wood posts spaced not more than 8 feet (2.4 m) apart, or as required for the specific application.

E. Gypsum Board: Minimum 1/2 inch (12.7 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.

F. Insulation: Where temporary enclosures are required to be insulated, provide unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, in thicknesses as indicated on the Drawings.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Storage Units: Provide secure, weathertight lockable storage units or containers, appropriate for the storage of materials on site.

C. Fabrication Sheds: Provide temporary sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to the municipal system or private system, if indicated on the Drawings, as directed by the Owner or authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction requirements.

D. Water Service: If acceptable to the Owner, use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

F. Temporary Heating and Cooling: Provide temporary heating and cooling as required by construction activities for curing or drying of completed installations, or for protecting installed construction from adverse effects of low or high temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

H. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Temporary electric power service may be installed overhead or underground, unless specifically indicated.
2. Connect temporary service to Owner's existing power source, as directed by Owner.

I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

J. Telephone and Data Services:

1. Provide telephone-based, cable-based, or wireless-based electronic communication services as described below:

a. Dedicated land-based telephone line(s) ~~WILL /~~ WILL NOT be required for telephone(s) in each field office.

b. Dedicated land-based telephone line(s) ~~WILL /~~ WILL NOT be required for facsimile machine(s) in each field office.

c. Dedicated land-based telephone or cable line(s) ~~WILL /~~ WILL NOT be required for computer(s) in each field office.

d. **Provide the superintendent with cellular telephone for use and contact at all times.**

1. In the Contractor's Field Office, post a list of important telephone numbers including police and fire departments, Contractor's home office, Architect's office, Owner's office, Principal subcontractors' field and home offices.

K. Electronic Communication Service: Provide superintendent with electronic mail service, either in the field office, laptop computer, or by portable personal communication device.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as required for access or as indicated on the Drawings.

1. Provide dust-control treatment that is non-polluting and non-tracking. Reapply treatment as required to minimize dust.

C. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas in same location as permanent roads and paved areas. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
2. Prepare subgrade and install subbase and base for temporary roads and paved areas to be incorporated into final work according to Division 2 Section "Earthwork."
3. Recondition base after temporary use, including removing contaminated material, regrading, proof rolling, compacting, and testing, as necessary to comply with requirements for Construction.
4. Delay installation of final course of permanent hot-mix asphalt pavement, if applicable, until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 2 Section "Hot-Mix Asphalt Paving."

D. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

E. Parking: Provide temporary parking areas, or use designated areas of Owner's existing parking areas for construction personnel, as directed by the Owner.

F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

G. Project Identification and Temporary Signs: Provide Project identification and other signs as required. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.

H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

J. Temporary Elevator Use: Refer to Division 14 Sections for temporary use of new elevators.

K. Existing Elevator Use: Use of Owner's existing elevators, if applicable, will be permitted, as long as elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

L. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

M. Existing Stair Usage: Use of Owner's existing stairs, if applicable, will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.

N. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

C. Stormwater Control: Comply with requirements of the authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.

F. Site Enclosure Fence: Prior to commencement of construction operations, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

1. Extent of Fence: Sufficient to accommodate construction operations, unless otherwise indicated on Drawings.

2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
3. Provide the Owner and/or Architect each with one set of keys.
4. Provide additional fencing and/or barricades at locations of excavation, prior to beginning excavation operations.

G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

J. Temporary Partitions: If applicable, provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and/or tenants from dust, fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
2. Construct dustproof partitions with 2 layers of 3-mil (0.07-mm) polyethylene sheet on each side. Cover floor with 2 layers of 3-mil (0.07-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.

    a. Where required, construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.

3. Insulate partitions to provide noise protection to occupied areas.
4. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
5. Protect air-handling equipment.
6. Weather strip openings.
7. Provide walk-off mats at each entrance through temporary partition.

K. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Prohibit smoking in enclosed construction areas.

2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage to work completed and/or in place.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of the Contractor.
2. The Owner reserves right to take possession of Project identification signs.
3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

END OF SECTION 015000

SECTION 015010 - PROJECT SIGN REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes provisions for Signage to be erected at the Project site, including, but not limited to, the following:

1. Construction Project Sign(s)
2. General Safety and/or Informational Signage

1.2 CONSTRUCTION PROJECT SIGN

A. General: The Contractor shall include in the project, Construction Project Sign(s) with the following information, as related to the Project.

1. Quantity Required:

NO PROJECT SIGN(S) WILL BE REQURIED FOR THIS PROJECT.

END OF SECTION 010510

SECTION 017200 – CONSTRUCTION SURVEYING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Construction Surveying.

1.2 QUALITY ASSURANCE

A. The contractor shall retain the services of a Professional Land Surveyor, licensed in the State of Louisiana for the services included in this section.

PART 2 - EXECUTION

2.1 SERVICES

A. A licensed surveyor shall, at a minimum, provide the following services:

1. Provide no less than (2) Temporary Benchmark Elevations on each project site, located so as to remain available for the duration of the project.
2. Provide construction staking of all underground utilities to be protected.
3. Provide construction staking of all slab on grade components verifying location conforms to the requirements of the Construction Documents.
4. Provide construction staking of all existing and new shaft locations to ensure conformance with bid documents.
5. Confirm vertical heights of structural components to ensure that the “finished floor” elevation conforms to the requirements of the Construction Documents.
6. **For each building, or buildings, and associated equipment pads or platforms, and prior to pouring any concrete slabs, the Contractor shall employ a Louisiana Licensed Land Surveyor to field verify and prepare for Project Record and for Permitting Authorities, a “TOP OF FORMWORK” Elevation Certificate.).**
7. **For each building, or buildings, and for associated equipment pads or platforms, the Contractor shall employ a Louisiana Licensed Land Surveyor to field verify and prepare for Project Record and for**

Permitting Authorities at Substantial Completion, a final "CERTIFICATE OF ELEVATION" for each building or structure, per the following requirements:

Provide a FEMA National Flood Insurance Program Elevation Certificate for each building or structure. The elevation certificate is to be completed and stamped by a Professional Land Surveyor, licensed in the State of Louisiana, in strict accordance with FEMA's National Flood Insurance Program (N.F.I.P.) requirements, and shall include photographs where required.

The Elevation Certificate(s) for each building or structure shall be prepared in accordance with and under the assumption that it is intended to support a LOMA or LOMR-F request.

END OF SECTION 017200

SECTION 017700 – PROJECT CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.

2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.5 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
n. Replace parts subject to unusual operating conditions.
o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

r. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017839 - PROJECT RECORD DOCUMENTATION

PART 1 - GENERAL

1.1 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work, as changes are made:

1. Drawings.
2. Specifications.
3. Addenda.
4. Architects/Engineers written responses to Requests for Information, Architect's Supplemental Instructions, Field Orders', Minor Change Directives, and Construction Change Directives.
5. Change Orders and other modifications to the Contract.
6. Proposal Requests, and other supplemental instructions.
7. Reviewed Shop Drawings, Product Data, and Samples.
8. Manufacturer's instructions for assembly, installation, maintaining, and adjusting of items installed in the Project.

B. Ensure entries are complete and accurate, enabling future reference by Owner. The Architect and Owner's Project Manager will review documents for general conformance, however, the Contractor will be solely responsible for completeness and accuracy of the documentation and other information.

C. Do not use Record Documents for construction purposes. Store Record Documents separate from documents used for construction. Protect Record Documents from deterioration and loss in a secure, weather-tight location in accordance with Section 015000, Temporary Facilities and Controls.

D. Record information concurrent with construction progress, not less than weekly.

E. Provide access to record documents for Owner's and Architect's reference during normal working hours.

F. Give particular attention to information on concealed products and installations that would be difficult to identify or measure and record later.

G. Mark record sets in red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.

1. Mark important additional information which was either shown schematically or omitted from original Documents.
2. Note Construction Change Directive numbers, Alternate numbers, Change Order numbers, and similar identifying information.

3. Where feasible, the individual or entity who obtained record data, whether the individuals or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on record documents.
4. Accurately record information in an understandable drawing technique.
5. Record data as soon as possible after it has been obtained. In the case concealed installations, record and check the mark-up prior to concealment.
6. Sign or initial and date each mark-up.

1.2 RECORD SPECIFICATIONS

A. Record Specifications: Maintain one complete copy of the Project Manual including addenda and modifications issued. Legibly mark and record at each product section a description of actual products installed and variations in actual Work performed in comparison with products specified. Include the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by addenda and modifications.
4. Related record drawing information and Product Data.
5. Other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.

1.3 RECORD DRAWINGS

A. Record Drawings: Maintain one complete blackline copy of the Drawings, Specifications, and Shop Drawings. Mark the set to show the actual installation where the installation varies from the Work as originally shown.

1. Legibly mark each item to record actual construction including, but not limited to the following:

    a. Measured depths of foundations in relation to project finish floor datum.
    b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
    c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
    d. Field changes of dimension and detail.
    e. Details not on original Drawings.
    f. Revisions to details shown on the Drawings.
    g. Dimensional changes to the Drawings.

h. Actual equipment locations.
i. Duct size and routing.
j. Changes made by Change Order; include change order number.

2. Mark completely and accurately record prints of Drawings, Specifications, and Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked to reflect changes in the Work, record a cross-reference at the corresponding location on the Drawings.

3. Prepare a full set of corrected reproducible Drawings and Shop Drawings.

4. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing; include the printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each Drawing. Refer instances of uncertainty to the Architect for resolution.

1.4 RECORD PRODUCT DATA

A. Maintain one copy of each Product data submittal for record document purposes. Mark Product Data to indicate the actual product installation. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and recommendations for installation.

1.5 RECORD PRODUCT SAMPLES

A. Immediately prior to date of Substantial Completion, meet with the Project Manager, and Owner, at the Owner's discretion, at the site to determine which of the Samples maintained during the construction period shall be transmitted to Owner for record purposes.

1. Comply with the Architect's instructions for packaging, identification marking, and delivery to Owner's Sample storage space.
2. Dispose of other Samples in manner specified for disposal of surplus and waste materials.

1.6 MISCELLANEOUS RECORD DOCUMENTS

A. Refer to other Specification Sections for additional miscellaneous record-keeping requirements and submittals in connection with various construction activities.

B. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and

reference. Categories of requirements resulting in miscellaneous records, include, but are not limited to the following:

1. Ambient and substrate condition tests
2. Inspections and certifications by governing authorities.
3. Fire resistance and flame spread test results.

1.7 **DELIVERABLES**

A. Project As-Built Drawings

1. Provide the Owner with (1) original, marked-up copy of the Project As-Built Drawings.

2. Provide the Owner with (1) scanned copy of the Project As-Built Drawings, on a Portable USB (thumb) Drive.

B. Operation, Maintenance, & Warranty Manuals

1. Provide the Owner with (1) original, locking "D" type, 3-ring binders, which include Operation, Maintenance, & Warranty documentation of all products utilized within the building. Sorted and divided by Division and/or Specification Section, as may be appropriate.

Include a listing of all Subcontractors and Material Suppliers utilized on the project.

Also, include Color Schedules, Door Schedules, Window Schedules, Hardware Schedules, Signage, Specialty Items, Mechanical, Plumbing, and Electrical Items, and other information which may be relevant to the Owner, or his maintenance crews, for future reference.

2. Provide the Owner with (1) Portable USB (thumb) Drive, which includes Operation, Maintenance, & Warranty documentation of all products utilized within the building, sorted and divided by Division and/or Specification Section, as may be appropriate.

Organize into folders and sub-folders, as may be appropriate for organization and rapid location of items as desired.

Include a listing of all Subcontractors and Material Suppliers utilized on the project.

Also, include Color Schedules, Door Schedules, Window Schedules, Hardware Schedules, Signage, Specialty Items, Mechanical, Plumbing,

and Electrical Items, and other information which may be relevant to the Owner, or his maintenance crews, for future reference.

1.8 CERTIFICATION

A. By submittal of Project Record Documents, the Contractor certifies, that to the best of his knowledge, information, and belief the documents are a true and complete representation of the actual construction of the Work of this Project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected portions of building(s), structure(s), paving, and/or other miscellaneous items.
2. Demolition and removal of selected site elements.
3. Salvage, storage, and protection of existing items to be reused, recycled, or turned over to the Owner.

B. Refer to Division 2 "Site Work" for site clearing and removal of above-and below-grade improvements, where applicable.

C. **Coordinate with the Owner and Architect prior to commencement of demolition for items indicated to be removed by the Owner, and items to be removed by the Contactor and turned-over to the Owner.**

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner**,** ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate detailed sequence of selective demolition and removal work, with starting and ending dates for each activity, interruption of utility services, use of elevator and stairs, and locations of temporary partitions and means of egress.

B. **Pre-demolition Documentation: The Contractor shall make Photographic and/or Video documentation indicating the existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by the Contractor's selective demolition operations. Comply with Division 1 Section 013231 "Pre-Construction Documentation." Submit documentation to the Owner, for their records, prior to commencement of selective demolition operations.**

C. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1. Comply with submittal requirements in Division 1 Section "Construction Waste Management."

1.4 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Pre-demolition Conference: Conduct conference including the Owner, Architect, Contractor, and applicable Subcontractors at the Project site, prior to commencement of any selective demolition operations.

1.5 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1. No sooner that 28 days prior to commencement of selective demolition operations, notify the Owner in writing of the date of commencement and schedule of selective demolition operations, so that the Owner may have sufficient time to remove any items to be salvaged.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Any known Hazardous materials will be removed by the Owner prior to the start of Work, or will be removed by the Owner under a separate Contract.
2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner in writing.
3. The Owner will employ an independent testing lab to determine the composition of any suspected hazardous materials.
4. If the suspected materials are deemed to be hazardous, the Owner will remove such materials under a separate Contract.

E. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner in writing.
2. The Owner will employ an independent testing lab to determine the composition of any suspected hazardous materials.
3. If the suspected materials are deemed to be hazardous, the Owner will remove such materials under a separate Contract.

F. Storage or sale of removed items or materials on-site is not permitted.

G. **Utility Services: Locate, maintain, and protect existing utilities indicated to remain in service and protect them against damage during selective demolition operations.**

1. **Contact Louisiana OneCall at 811, for location of underground utilities, prior to performing and excavation or demolition activities.**

2. **Maintain fire-protection, water, sewer, climate control, and electrical facilities in service during selective demolition operations.**

3. **Existing utilities which must be removed to accommodate selective demolition operations shall be terminated, prior to start of selective demolition operations. Upon completion of selective demolition operations, utilities shall be reconnected, properly tested, inspected by the Authorities Having Jurisdiction, and services restored.**

4. **Any utility shut-downs must be coordinated with, scheduled, and approved by the Owner, prior to commencing.**

5. **Schedule and coordinate work phases, so as to maintain climate control at the building, in order to protect and prevent damage to interior finishes.**

a. The Contractor shall be solely responsible for repairs and/or damage to building interior finishes, including mold remediation if required, that may occur as a result of the Contractor's failure to maintain climate control of the existing building(s).

6. Schedule and coordinate work phases, so as to maintain weathertightness of the at the building, in order to protect and prevent damage to interior finishes.

a. The Contractor shall be solely responsible for repairs and/or damage to building interior finishes, including mold remediation if required, that may occur as a result of the Contractor's failure to maintain weathertightness of the existing building(s).

1.6 WARRANTY

A. The Contractor shall, at his own expense, remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

B. Any items or materials scheduled to remain which are damaged during the course of selective demolition operations are to be repaired or replaced by the Contractor at no additional expense to the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and document the condition of items to be removed and reinstalled and items to be removed and salvaged. *Refer to Section 013231 "Pre-Demolition Documentation", Part 1.3.B for requirements.*

D. When unanticipated structural elements, mechanical, electrical, low-voltage controls, data/comm, special systems, or other items or systems that conflict with the scheduled demolition or the intended function or design are encountered, do not disturb. Investigate and measure the nature and extent of conflict, and immediately notify Architect in writing.

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. **Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, preconstruction videotapes, and other measures as required to accurately document all existing conditions.**

1. Document any utilities encountered on the Project As-Built drawings.

2. Comply with requirements specified in Division 1 Section "Photographic Documentation", if applicable.

G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. **Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.**

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Division 1 Section "Temporary Facilities and Controls."

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. If necessary, employ the services of a Professional Engineer, licensed in the State of Louisiana to design and inspect shoring, bracing, and structural supports as detailed above.

3.4 SELECTIVE DEMOLITION

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
5. Dispose of demolished items and materials promptly. Comply with requirements in Division 1 Section "Construction Waste Management."

B. Reuse of Building Elements: Project has been designed to result in end-of-Project rates for reuse of building elements as follows. Do not demolish building elements beyond what is indicated on Drawings without Architect's approval.

1. Building Structure and Shell: As indicated.
2. Non-shell Elements: As indicated.

C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area as indicated on the Drawings or otherwise designated by Owner.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill, based on the type and nature of the items to be disposed.

1. Comply with requirements specified in Division 1 Section "Construction Waste Management."

B. Burning: Do not burn demolished materials on site.

C. Burying: Do not bury demolished materials on site.

D. Disposal: Haul demolished materials off of Owner's property, and dispose of in accordance with all applicable Federal, State, and Local regulations.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 033000 – CAST-IN-PLACE CONCRETE

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. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1. Footings.
2. Foundation walls.
3. Slabs-on-grade.
4. Drilled Piers/Drilled Shafts
5. Suspended slabs.
6. Concrete toppings.
7. Building frame members.
8. Building walls.

B. Related Sections include the following:

1. Division 03 Section "Architectural Concrete" for general building applications of specially finished formed concrete.
2. Division 03 Section "Concrete Topping" for emery- and iron-aggregate concrete floor toppings.
3. Division 31 Section "Earth Moving" for drainage fill under slabs-on-grade.
4. Division 32 Section "Concrete Paving" for concrete pavement and walks.
5. Division 32 Section "Decorative Concrete Paving" for decorative concrete pavement and walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

A. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mixing water to be withheld for later addition at Project site.

B. Floor surface flatness and levelness measurements to determine compliance with specified tolerances.

C. Field quality-control test and inspection reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

C. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."

D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

E. **Concrete Testing Service: The Owner shall engage a qualified independent construction materials testing agency to perform material evaluation tests and to test concrete samples.**

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Nominal dimensioned lumber. For standard edge forms, adjacent to grade, utilize nominal dimensioned lumber.

a. **Form exposed faces adjacent to grade utilizing formwork no less than 11-1/4" high (2x12).**

2. Plywood for vertical surfaces exposed to view.

a. **For exposed vertical faces more than 11-1/4" high, utilize "Form-Ply" Plywood, metal, or other approved panel materials, to result in a smooth, finished, appearance. Orient plywood panels horizontal or vertical to minimize seams.**

3. Plywood for vertical faces not exposed to view.

   For concealed vertical faces, not exposed to view, utilize exterior-grade plywood panels of Grade B/C or Grade CDX, suitable for use as concrete forms, and complying with DOC PS 1, and as follows:

   a. High-density overlay, Class 1 or better.
   b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
   c. Structural 1, B-B or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

D. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.

E. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

F. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.

G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

H. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

   1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

I. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

   1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
   2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
   3. Furnish ties with integral water-barrier plates to walls indicated to receive damp-proofing or waterproofing.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.

C. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60 (Grade 420), deformed bars, assembled with clips.

D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

2.5 STEEL CASINGS (Drilled Shafts/Piers)

A. Steel Pipe Casings: ASTM A 283/A 283M, Grade C, or ASTM A 36/A 36M, carbon-steel plate, with joints full-penetration welded according to AWS D1.1/D1.1M.

B. **Refer to Specification Section 316329 for specific requirements for Drilled Shafts & Piers.**

2.6 SLURRY (Drilled Shafts/Piers)

A. Slurry: Pulverized bentonite, pulverized attapulgite, or polymers mixed with water to form stable colloidal suspension; complying with ACI 336.1 for density, viscosity, sand content, and pH.

B. **Refer to Specification Section 316329 for specific requirements for Drilled Shafts & Piers.**

2.7 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I or 1L

2. Fly Ash: ASTM C 618, Class C or F.

a. **With Type 1 Cement Mixes – Limit Fly Ash to 15% Maximum of the Total Cementitious Material, by weight.**

b. **With Type 1L Cement Mixes – Provide Fly Ash (Required) in the amount of 15% of the Total Cementitious Material, by weight.**

3. Ground Granulated Blast Furnace Slag: NOT ALLOWED

4. Other Cementitious Replacement Materials: NOT ALLOWED

B. Normal-Weight Aggregates: ASTM C 33, uniformly graded as follows:

1. Maximum Coarse-Aggregate Size: 1-1/2 inches (38 mm) nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Lightweight Aggregate: ASTM C 330, 3/4-inch (19-mm) nominal maximum aggregate size.

D. Water: ASTM C 94/C 94M. Water shall be potable.

1. **Water-to-Cement Ratio shall be 0.50 (±0.05)**.
2. The Concrete Supplier shall prepare Mix Designs which utilize water-reducing admixtures to limit the amount of water required in the mix.

2.8 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.9 WATERSTOPS

A. Flexible Rubber Waterstops: CE CRD-C 513, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.

1. Available Manufacturers:

a. Greenstreak.
b. Progress Unlimited, Inc.
c. Williams Products, Inc.

2. Profile: Ribbed with center bulb.

B. Flexible PVC Waterstops: CE CRD-C 572, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.

1. Available Manufacturers:

a. Bometals, Inc.
b. Greenstreak.
c. Meadows, W. R., Inc.
d. Murphy, Paul Plastics Co.
e. Progress Unlimited, Inc.
f. Tamms Industries, Inc.
g. Vinylex Corp.

2. Profile: Ribbed with center bulb.

C. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch (19 by 25 mm).

1. Available Products:

a. Colloid Environmental Technologies Company; Volclay Waterstop-RX.
b. Concrete Sealants Inc.; Conseal CS-231.
c. Greenstreak; Swellstop.
d. Henry Company, Sealants Division; Hydro-Flex.
e. JP Specialties, Inc.; Earthshield Type 20.
f. Progress Unlimited, Inc.; Superstop.
g. TCMiraDRI; Mirastop.

D. Self-Expanding Rubber Strip Waterstops: Manufactured rectangular or trapezoidal strip, bentonite-free hydrophilic polymer modified chloroprene rubber, for adhesive bonding to concrete, 3/8 by 3/4 inch (10 by 19 mm).

1. Available Products:

    a. Deneef Construction Chemicals; Swellseal.
    b. Greenstreak; Hydrotite.
    c. Mitsubishi International Corporation; Adeka Ultra Seal.
    d. Progress Unlimited, Inc.; Superstop.

2.10 VAPOR RETARDERS

A. Plastic Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.

1. Available Products:

    a. Fortifiber Corporation; Moistop Ultra A.
    b. Raven Industries Inc.; Vapor Block.
    c. Reef Industries, Inc.; Griffolyn Type.
    d. Stego Industries. LLC, Stego Wrap.

B. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.

2.11 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

Note: The Contractor shall be responsible for coordination of compatibility between curing compounds with floor coatings, floor coverings, and adhesives.

Note: Where the floor coating, floor covering, or adhesive manufacturer recommends that curing compounds not be used, omit curing compounds, and cure the slab with water and poly-ethlyene sheeting.

1. Available Products:

    a. Axim Concrete Technologies; Cimfilm.
    b. Burke by Edoco; BurkeFilm.
    c. ChemMasters; Spray-Film.
    d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
    e. Dayton Superior Corporation; Sure Film.
    f. Euclid Chemical Company (The); Eucobar.
    g. Kaufman Products, Inc.; Vapor Aid.
    h. Lambert Corporation; Lambco Skin.

i. L&M Construction Chemicals, Inc.; E-Con.
j. MBT Protection and Repair, Div. of ChemRex; Confilm.
k. Meadows, W. R., Inc.; Sealtight Evapre.
l. Metalcrete Industries; Waterhold.
m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
n. Sika Corporation, Inc.; SikaFilm.
o. Symons Corporation, a Dayton Superior Company; Finishing Aid.
p. Unitex; Pro-Film.
q. US Mix Products Company; US Spec Monofilm ER.
r. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

1. Available Products:

a. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB.
b. Burke by Edoco; Aqua Resin Cure.
c. ChemMasters; Safe-Cure Clear.
d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; W.B. Resin Cure.
e. Dayton Superior Corporation; Day Chem Rez Cure (J-11-W).
f. Euclid Chemical Company (The); Kurez DR VOX.
g. Kaufman Products, Inc.; Thinfilm 420.
h. Lambert Corporation; Aqua Kure-Clear.
i. L&M Construction Chemicals, Inc.; L&M Cure R.
j. Meadows, W. R., Inc.; 1100 Clear.
k. Nox-Crete Products Group, Kinsman Corporation; Resin Cure E.
l. Symons Corporation, a Dayton Superior Company; Resi-Chem Clear Cure.
m. Tamms Industries, Inc.; Horncure WB 30.
n. Unitex; Hydro Cure 309.
o. US Mix Products Company; US Spec Maxcure Resin Clear.
p. Vexcon Chemicals, Inc.; Certi-Vex Enviocure 100.

F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, non-dissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

1. Available Products:

    a. Anti-Hydro International, Inc.; AH Clear Cure WB.
    b. Burke by Edoco; Spartan Cote WB II.
    c. ChemMasters; Safe-Cure & Seal 20.
    d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Cure and Seal WB.
    e. Dayton Superior Corporation; Safe Cure and Seal (J-18).
    f. Euclid Chemical Company (The); Aqua Cure VOX.
    g. Kaufman Products, Inc.; Cure & Seal 309 Emulsion.
    h. Lambert Corporation; Glazecote Sealer-20.
    i. L&M Construction Chemicals, Inc.; Dress & Seal WB.
    j. Meadows, W. R., Inc.; Vocomp-20.
    k. Metalcrete Industries; Metcure.
    l. Nox-Crete Products Group, Kinsman Corporation; Cure & Seal 150E.
    m. Symons Corporation, a Dayton Superior Company; Cure & Seal 18 Percent E.
    n. Tamms Industries, Inc.; Clearseal WB 150.
    o. Unitex; Hydro Seal.
    p. US Mix Products Company; US Spec Hydrasheen 15 percent
    q. Vexcon Chemicals, Inc.; Starseal 309.

G. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

1. Available Products:

    a. Burke by Edoco; Cureseal 1315.
    b. ChemMasters; Spray-Cure & Seal Plus.
    c. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Sealcure 1315.
    d. Dayton Superior Corporation; Day-Chem Cure and Seal (J-22UV).
    e. Euclid Chemical Company (The); Super Diamond Clear.
    f. Kaufman Products, Inc.; Sure Cure 25.
    g. Lambert Corporation; UV Super Seal.
    h. L&M Construction Chemicals, Inc.; Lumiseal Plus.
    i. Meadows, W. R., Inc.; CS-309/30.
    j. Metalcrete Industries; Seal N Kure 0.
    k. Sonneborn, Div. of ChemRex; Kure-N-Seal 5.
    l. Tamms Industries, Inc.; LusterSeal 300.
    m. Unitex; Solvent Seal 1315.
    n. US Mix Products Company; US Spec CS-25
    o. Vexcon Chemicals, Inc.; Certi-Vex AC 1315

H. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

1. Available Products:

a. Burke by Edoco; Cureseal 1315 WB.
b. ChemMasters; Polyseal WB.
c. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Sealcure 1315 WB.
d. Euclid Chemical Company (The); Super Diamond Clear VOX.
e. Kaufman Products, Inc.; Sure Cure 25 Emulsion.
f. Lambert Corporation; UV Safe Seal.
g. L&M Construction Chemicals, Inc.; Lumiseal WB Plus.
h. Meadows, W. R., Inc.; Vocomp-30.
i. Metalcrete Industries; Metcure 30.
j. Symons Corporation, a Dayton Superior Company; Cure & Seal 31 Percent E.
k. Tamms Industries, Inc.; LusterSeal WB 300.
l. Unitex; Hydro Seal 25.
m. US Mix Products Company; US Spec Radiance UV-25.
n. Vexcon Chemicals, Inc.; Vexcon Starseal 1315.

2.12 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

D. Reglets: Fabricate reglets of not less than 0.0217-inch- (0.55-mm-) thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch (0.85 mm) thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.13 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4000 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

B. Repair & Over-layment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.

2.14 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:

1. Fly Ash: 15 percent (maximum).
2. Combined Fly Ash and Pozzolan: 15 percent (maximum).
3. Ground Granulated Blast Furnace Slag: 15 percent (maximum).

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

E. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.15 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings, Drilled Shafts, and Foundation Walls: Proportion normal-weight concrete mixture as follows:

1. Provide Concrete with Compressive Strength(s) and other characteristics, as indicated on drawings and details. Refer to drawings and details for types, applications, and locations.
2. The Minimum Compressive Strength for concrete of any use or application shall be 3000 psi (20.7 MPa) at 28 days.
3. Approximate Water-Cementitious Materials Ratio: 0.50.
4. Slump Limit: 5 inches (100 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch (25 mm).
5. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch (38-mm) nominal maximum aggregate size.
6. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch (19-mm) nominal maximum aggregate size.

2.16 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.17 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing time by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 PREPARATION (Drilled Shafts/Piers)

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, vibration, and other hazards created by drilled-pier operations.

3.2 EXCAVATION (Drilled Shafts/Piers)

A. Unclassified Excavation: Excavate to bearing elevations regardless of character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions.

1. Obstructions: Unclassified excavation may include removal of unanticipated boulders, concrete, masonry, or other subsurface obstructions. No changes in the Contract Sum or the Contract Time will be authorized for removal of obstructions.
2. Obstructions: Unclassified excavated materials may include removal of unanticipated boulders, concrete, masonry, or other subsurface obstructions. Payment for removing obstructions that cannot be removed by conventional augers fitted with soil or rock teeth, drilling buckets, or under-reaming tools attached to drilling equipment of size, power, torque, and down thrust necessary for the Work will be according to Contract provisions for changes in the Work.

B. Prevent surface water from entering excavated shafts. Conduct water to site drainage facilities.

C. Excavate shafts for drilled piers to indicated elevations. Remove loose material from bottom of excavation.

1. Excavate bottom of drilled piers to level plane within 1:12 tolerance.
2. Remove water from excavated shafts before concreting.
3. Excavate rock sockets of dimensions indicated.

D. Notify and allow testing and inspecting agency to test and inspect bottom of excavation. If unsuitable bearing stratum is encountered, make adjustments to drilled piers as determined by Architect.

1. Do not excavate shafts deeper than elevations indicated unless approved by Architect.
2. Payment for additional authorized excavation will be according to Contract provisions for changes in the Work.

E. Slurry Displacement Method: Stabilize excavation with slurry maintained a minimum of 60 inches above ground-water level and above unstable soil strata to prevent caving or sloughing of shaft. Maintain slurry properties before concreting.

1. Excavate and complete concreting of drilled pier on same day if possible, or redrill, clean, and test slurry in excavation before concreting.
2. Clean bottom of each shaft before concreting.

F. Temporary Casings: Install watertight steel casings of sufficient length and thickness to prevent water seepage into shaft; to withstand compressive, displacement, and withdrawal stresses; and to maintain stability of shaft walls.

1. Remove temporary casings, maintained in plumb position, during concrete placement and before initial set of concrete, or leave temporary casings in place.

G. Tolerances: Construct drilled piers to remain within ACI 336.1 tolerances.

1. If location or out-of-plumb tolerances are exceeded, provide corrective construction. Submit design and construction proposals to Architect for review before proceeding.

3.3 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.4 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
3. Install dovetail anchor slots in concrete structures as indicated.

3.5 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.6 SHORES AND RE-SHORES

A. Comply with ACI 318 (ACI 318M) and ACI 301 for design, installation, and removal of shoring and reshoring.

1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and re-shore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.7 UNDERSLAB VAPOR BARRIER SYSTEM

A. Plastic Vapor Barrier: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.

1. 10-mil (Minimum) Thickness

2. Acceptable products shall meet or exceed ALL requirements of ASTM E1643.

3. Products not meeting or exceeding ALL requirements of ASTM E1643 shall not be approved, or utilized on this project.

4. Lap joints 6 inches (150 mm) minimum, and seal with manufacturer's recommended tape.

5. Seal all penetrations through Vapor Barrier, per the manufacturer's installation details.

6. All materials utilized shall be of the Vapor Barrier manufacturer's recommended type, and all products shall be part of the manufacturer's Underslab Vapor Barrier System

B. Bituminous Vapor Retarders: Place, protect, and repair vapor retarders according to manufacturer's written instructions.

3.8 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Weld reinforcing bars according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

F. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M. Use epoxy-coated steel wire ties to fasten epoxy-coated steel reinforcement.

G. Zinc-Coated Reinforcement: Repair cut and damaged zinc coatings with zinc repair material according to ASTM A 780. Use galvanized steel wire ties to fasten zinc-coated steel reinforcement.

3.9 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-third of concrete thickness as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Division 07 Section "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.10 WATERSTOPS

A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

3.11 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

H. Dry Method (Drilled Shafts/Piers): Place concrete to fall vertically down the center of drilled pier without striking sides of shaft or steel reinforcement.

1. Where concrete cannot be directed down shaft without striking reinforcement, place concrete with chutes, tremies, or pumps.
2. Vibrate top 60 inches of concrete.

I. Slurry Displacement Method (Drilled Shafts/Piers): Place concrete in slurry-filled shafts by tremie methods or pumping. Control placement operations to ensure that tremie or pump pipe is embedded no fewer than 60 inches into concrete and that flow of concrete is continuous from bottom to top of drilled pier.

J. Coordinate withdrawal of temporary casings with concrete placement to maintain at least a 60-inch head of concrete above bottom of casing.

1. Vibrate top 60 inches of concrete after withdrawal of temporary casing.

K. Screed concrete at cutoff elevation level and apply scoured, rough finish. Where cutoff elevation is above the ground elevation, form top section above grade and extend shaft to required elevation.

3.12 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:

1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part Portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white Portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part Portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white Portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.13 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in 1 direction.

1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to surfaces indicated exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
2. Finish surfaces to the following tolerances, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:

a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.

b. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.
c. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.
d. Specified overall values of flatness, F(F) 45; and of levelness, F(L) 35; with minimum local values of flatness, F(F) 30; and of levelness, F(L) 24.

3. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-foot- (3.05-m-) long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed 3/16 inch (4.8 mm).

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

G. Slip-Resistive Finish: Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows:

1. Uniformly spread 25 lb/100 sq. ft. (12 kg/10 sq. m) of dampened slip-resistive aggregate over surface in 1 or 2 applications. Tamp aggregate flush with surface, but do not force below surface.
2. After broadcasting and tamping, apply float finish.
3. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aggregate.

H. Dry-Shake Floor Hardener Finish: After initial floating, apply dry-shake floor hardener to surfaces according to manufacturer's written instructions and as follows:

1. Uniformly apply dry-shake floor hardener at a rate of 100 lb./100 sq. ft. (49 kg/10 sq. m) unless greater amount is recommended by manufacturer.
2. Uniformly distribute approximately two-thirds of dry-shake floor hardener over surface by hand or with mechanical spreader, and embed by power floating. Follow power floating with a second dry-shake floor hardener application, uniformly distributing remainder of material, and embed by power floating.
3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake floor hardener manufacturer and apply immediately after final finishing.

3.14 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.15 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb./sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.
b. Continuous water-fog spray.
c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.16 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than 14 days' old.
3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

B. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

3.17 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least six month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.18 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part Portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension in solid concrete, but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, pop outs, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.19 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
6. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
7. Compression Test Specimens: ASTM C 31/C 31M.

    a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
    b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.

8. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.

    a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.

b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
11. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness according to ASTM E 1155 (ASTM E 1155M) within 48 hours of finishing.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS (Drilled Shafts/Piers)

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property (or on property as directed by Owner).

END OF SECTION 033000

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED SECTIONS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SCOPE

A. Fabricated steel and aluminum items, as indicated in the drawings.

1.3 SUMMARY

A. Section Includes the following items, as may be applicable to the project:

1. Shelf Angles.
2. Loose Masonry Lintels
3. Loose Bearing Plates
4. Masonry Embed Bearing Plates
5. Masonry Support Beams
6. Embedded slab edge angles
7. Elevator Hoist Beams
8. Trench Drains, Grates, and Frames
9. Coverplates and Frames
10. Guardrails
11. Handrails
12. Parking Bollards
13. Other Miscellaneous Steel Items

B. Related Requirements:

1. Section 033000 "Cast-In-Place Concrete" for installing anchor bolts and/or metal fabrications at concrete foundations, paving, stairs, ramps, and other installations.

1.4 COORDINATION

A. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including items with integral anchors, that are to be embedded in masonry. Deliver such items to Project site in time for installation.

1.5 ACTION SUBMITTALS

A. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following, as may be applicable to the project:

1. Shelf Angles.
2. Loose Masonry Lintels
3. Loose Bearing Plates
4. Masonry Embed Bearing Plates
5. Masonry Support Beams
6. Embedded slab edge angles
7. Elevator Hoist Beams
8. Trench Drains, Grates, and Frames
9. Coverplates and Frames
10. Guardrails
11. Handrails
12. Parking Bollards
13. Other Miscellaneous Steel Items

1.6 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code - Steel."

B. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A 36.

C. Steel Tubing: ASTM A 500 (Grade B).

2.2 FASTENERS

A. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.

2.3 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.

D. Provide for anchorage of type indicated; coordinate with supporting structure.

2.4 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

C. Galvanize miscellaneous framing and supports where indicated.

2.5 FABRICATED METAL ITEMS

A. Provide fabricated metal items, miscellaneous steel, and other items, as indicated on the Drawings.

B. Galvanize items where indicated, or otherwise scheduled.

C. Galvanized surfaces, where damaged, welded, and/or ground smooth shall be repaired using ZRC Zinc Repair Compound, high-zinc liquid galvanizing repair compound. Spray galvanizing products shall not be accepted.

2.6 FINISHES, GENERAL

A. Prepare fabricated metal items, miscellaneous steel, and other items, as required to receive final finish(es) as indicated, or otherwise scheduled.

B. Refer to Specification Section 099000 “Painting” for fabricated items scheduled to be field painted.

C. Coordinate with other trades as required.

2.7 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize all items to comply with ASTM A 153 for steel and iron hardware and with ASTM A 123 for other steel and iron products.

B. Galvanized surfaces, where damaged, welded, and/or ground smooth shall be repaired using ZRC Zinc Repair Compound, high-zinc liquid galvanizing repair compound. Spray galvanizing products shall not be accepted.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.

E. Provide temporary bracing or anchors in formwork for items that are to be built masonry.

3.2 INSTALLING MASONRY BEARING PLATES, SUPPORTS, AND EMBEDDED ITEMS

A. General: Refer to drawings for locations and placement of Metal Fabrications, including embedded and surface-mounted items.

B. Install framing and supports to comply with the requirements of items being supported, including manufacturers' written instructions, and requirements indicated on Shop Drawings.

3.3 ADJUSTING AND CLEANING

A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 78.

B. Galvanized surfaces, where damaged, welded, and/or ground smooth shall be repaired using ZRC Zinc Repair Compound, high-zinc liquid galvanizing repair compound. Spray galvanizing products shall not be accepted.

C. Galvanized items scheduled or otherwise indicated to be painted shall be sanded and/or ground smooth, and prepped as required to result in a smooth, architectural grade finish.

END OF SECTION 055000

SECTION 099000 – PAINTING & COATINGS

PART 1 - GENERAL

1.00 SUMMARY

A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1.01 DESCRIPTION OF WORK

A. The extent of painting work is shown on drawings and schedules, and as herein specified.

B. The work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.

1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

C. The work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.

D. “Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime intermediate or finish coats.

E. Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint same as adjacent similar materials or areas. If color or finish is not designated, Architect will select these from standard colors available for materials systems specified.

F. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as *(but not limited to)* metal toilet enclosures, refinished partition systems, acoustic materials, architectural woodwork and casework, finished mechanical and electrical equipment including light fixtures, switchgear and distribution cabinets, elevator entrance frames, doors and equipment.

G. Concealed Surfaces: Unless otherwise indicated, such as back priming of all exterior wood trim, painting is not required on surfaces such as walls or

ceiling in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.

H. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting, unless otherwise indicated.

I. Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts will not require finish painting, unless otherwise indicated. Do not paint over any code-required labels, such as Underwriters Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature panels.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

B. Samples: Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

1. On 12"x 12" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.

1.03 DELIVERY AND STORAGE

Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer’s name and label, and following information:

A. Name or title of material, Federal Specification number (if applicable), application instructions, manufacturer's color name and number.

1.06 QUALITY ASSURANCE

A. Mock-Up Samples: Provide a full-coat benchmark finish sample for each type of coating and substrate required, to include primer coat and top coats, similar to those specified later in this Section.

1. Exterior Wall Surfaces: **Allow for up to 4 samples of approximately 10 SF to include siding, and trim selections.**
2. Exterior Ceilings and Soffits: **None required.**
3. Interior Wall Surfaces: **Allow for up to 4 samples of approximately 100 SF to include wall, and trim selections.**
4. Millwork, Small Areas and Items: **Allow for up to 4 additional miscellaneous colors to be located at various miscellaneous areas and items. Architect will designate items or areas required.**

B. Final approval of colors will be selected from Mock-Up samples.

C. Approved Mock-Up samples may be incorporated into the finished work.

1.05 JOB CONDITIONS

A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between *50 degrees F (10 degrees C.)* And *90 Degrees F (32 degrees C.)* Unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between *45 degrees F (7 degrees C.)* And *95 degrees F (35 degrees C.),* unless otherwise permitted by paint manufacturer's printed instruction.

C. DO NOT APPLY PAINT in snow, rain, fog or mist; or when relative humidity exceeds *85%* or damp or wet surfaces, or as recommended by the manufacturer for the specific product being applied, unless otherwise permitted by paint manufacturer's printed instructions. Painting may be continued during inclement weather if areas and surfaces to be painted are closed, heated, and within temperature and humidity limits specified by the paint manufacturer during the duration of application and drying periods.

C. Paint Coordination: Provide finish coats which are compatible with primer paints used. Review other sections of these specification in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

1.06 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with manufacturer's labels describing contents. Deliver extra materials to Owner.

1. Quantity: 5 percent, but not less than 1 gal. (3.8 L), as appropriate, of each material and color applied.
2. Deliver and store the extra stock in the attic of each residence. Provide to the Architect documentation signed by the Contractor's Project Superintendent, indicating receipt and delivery of the extra materials, as directed.

PART 2 - PRODUCTS

2.01 MATERIAL QUALITY

A. Provide best quality grade of various types of coating as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

1. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.
2. Federal Specifications establish minimum acceptable quality for paint materials. Provide written certification from paint manufacturer that materials provided meet or exceed these minimums.
3. Manufacturer's products which comply with coating qualitative requirements of applicable Federal Specifications, yet differ in quantitative requirements, may be considered for use when acceptable to Architect. Furnish material data and manufacturer's certificate of performance to Architect for any proposed substitutions.

B. Provide undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

C. Coordination: Ensure that the manufacturer guarantees the materials proposed for finish coats are compatible with proposed primer(s).

D. **Refer to the "Schedule of Paint Systems" provided at the end of this section.**

PART 3 - EXECUTION

3.01 INSPECTION:

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work.

B. **Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator's acceptance of surfaces and conditions within any particular area. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film, or over C.M.U. walls that have not been completely filled, to eliminate open pin holes.**

3.02 SURFACE PREPARATION

A. General:

1. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified for each particular substrate condition. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary for complete painting of painting of each space or area, reinstall removed items. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning.

2. Ensure that debris from cleaning and preparation processes will not fall onto wet, newly-painted surfaces.

3. **Surface preparation shall include scraping, sanding, and other cleaning (via by hand, power-tool, or chemical cleaning processes), as required to prepare the surface for application in strict accordance with the requirements of the manufacturer to ensure that the manufacturer's Warranties will not be compromised.**

4. **The Painting Subcontractor shall perform destructive testing of the existing painted surfaces prior to Bidding, as necessary to accurately determine and address any areas where adhesion issues may exist, and to adequately include addressing the same as part of the Contractor’s Bid Proposal.**

B. Cementitious Materials:

1. Prepare Cementitious surfaces of concrete, concrete block, cement plaster and cement board to be painted by removing efflorescence, chalk, dust, dirt, grease, oils and by roughening as required to remove glaze. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
2. Clean concrete floor surfaces scheduled to be painted with commercial solution of muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid, and allow to dry before painting.

C. Wood Materials:

1. Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of while shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.
2. Prime, stain or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces-undersides, and backsides of such wood, including cabinets, counters, cases, paneling.
3. When transparent finish is required, use spar varnish for back-priming.
4. Back-prime paneling on interior partitions only where masonry plaster, or other wet wall construction occurs on backside.
5. Seal tops, bottoms, and cut-outs of un-primed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

D. Galvanized Surfaces:

1. Clean free of oil and surface contamination with non-petroleum based solvent.

3.03 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

1. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.
2. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film if necessary, and strain material before using.

3.04 APPLICATION

A. General:

1. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
2. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
3. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.
4. Paint interior surfaces of ducts, where visible through registers or grilles, with flat, non-specular black paint.
5. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.
6. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.
7. Sand lightly between each succeeding enamel or varnish coat.
8. Omit first coat *(primer)* on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.

9. **Apply C.M.U. Block Filler in two coats. After installation and drying, inspect and apply additional Block Filler at any locations required to completely fill all voids in particularly porous blocks. Finish coats of paint shall not be installed until all voids have been filled in the C.M.U. substrate.**

B. Scheduling Painting:

1. Apply first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

2. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

3. **DO NOT APPLY FINAL COAT(S) OF PAINT TO ANY SURFACE UNTIL PERMANENT LIGHTING IS TURNED ON, SURFACES HAVE BEEN THOROUGHLY AND CAREFULLY INSPECTED, AND ANY REMEDIAL WORK HAS BEEN COMPLETED.**

C. Minimum Coating Thickness:

1. Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

D. Prime Coats:

1. Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

2. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat to assure a finish coat with no burn-through or other defects due to insufficient sealing.

E. Block Filler:

1. Apply first coat generously, and back-roll thoroughly, with the intent of filling all voids in the surface of the CMU or brick.

2. Upon drying, thoroughly and carefully inspect all surfaces for thin areas, voids, pinholes, or other surface defects which will require patching, filling, caulking, and/or re-coating.

3. Where individual CMU blocks vary noticeably in porosity or surface texture, spot apply additional coats of block filler, as required to approximate the surface texture (smoothness) of the adjacent blocks.

4. Recoat as required to provide a smooth, uniform surface for application of top coats, prior to installation of finish coats.

F. Pigmented (Opaque) Finishes:

1. Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, color spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

F. Transparent (Clear) Finishes:

1. Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs brush marks, orange peel, nail holes, or other surface imperfections.

G. Completed Work:

1. Match approved samples for color, texture, and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.05 FIELD QUALITY CONTROL

A. The right is reserved by the Owner to invoke material testing procedures at any time, and at any frequency during the period of field painting.

3.06 CLEAN-UP AND PROTECTION

A. Clean-Up:

1. During progress of work remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

2. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping using care not to scratch or otherwise damage finished surfaces.

B. Protection:

1. Protect work of other trades, whether to be painted or not, against damage by painting and finishing or work. Correct any damage by cleaning, repairing or

replacing, and repainting, as acceptable to Architect.

2. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

3. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.07 MANUFACTURERS

A. Provide Painting products by one of the following manufacturers:

1. The Sherwin-Williams Company
2. Benjamin-Moore & Co.
3. PPG Pittsburg Paints

B. Provide all Interior and Exterior paint materials from a single manufacturer.

C. Products by The Sherwin-Williams Co. are listed only for the purpose of establishing a Basis of Design and minimum level of quality.

D. Approval of products by alternate manufacturers: Equivalent products manufactured by the alternate manufacturers listed will be considered if: (1) submitted in accordance with the requirements of the Contract Documents, and (2) accompanied by a line item specification comparison, to verify that the products submitted by the alternate manufacturer are equal or superior to those listed to establish the Basis of Design and minimum level of quality.

3.08 **EXTERIOR PAINT SCHEDULE**

A. General: Provide paint systems for the various substrates, as indicated.

Ferrous/Galvanized Metal/Aluminum (Doors, Frames, Bollards, & Misc. Metal)
Basis of Design:
Base Coat: Sherwin-Williams: B66W01310 - Pro Ind. Pro-Cryl® Universal Acrylic Primer
Note: Apply additional coats of primer, if necessary to achieve complete coverage of metal substrate, sanding in-between if necessary, as required to provide a smooth, uniform, and level surface for application of finish coats.
1st Top Coat: Sherwin-Williams: B66W01151- Pro Industrial DTM Acrylic (Semi-Gloss)
2nd Top Coat: Sherwin-Williams: B66W01151- Pro Industrial DTM Acrylic (Semi-Gloss)

END OF SECTION 099000

SECTION 101453 – SITE, PARKING, AND TRAFFIC SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Site, Parking, and Traffic Signage

1.2 RELATED SECTIONS

A. Refer to the following specification sections for related work, not specified in this section.

1. Specification Section 033000 “Cast-In-Place Concrete” for footings and supports.
2. Specification Section 055000 “Metal Fabrications” for sign posts and mountings not included in this section.

1.2 SUBMITTALS

A. For each type of product indicated, provide the following:

1. Product Data
2. Shop Drawings
3. Installation Instructions, including ADA compliance.
4. Warranty Information

PART 2 - PRODUCTS

2.1 Site, Parking, and Traffic Signage

A. Site, Parking, and Traffic Signs shall be MUTCD-compliant, heavy-duty, 0.080” thick, Engineer Grade Aluminum Signs.

1. Alternate items must be similar in appearance, design, and quality, in order to be approved as “equal”.
2. Requests for substitutions shall be submitted for approval prior to Bid, in accordance with the requirements in the Instructions To Bidders.

B. **Refer to the Drawings for Signage Schedule, including Sizes, Types, Wording, mounting requirements, etc. Refer to the Drawings for Locations and quantity of various types of Signage located at the site.**

C. Manufacturers: Subject to compliance with requirements of the Contract Documents, Drawings, and Specifications, provide products by one of the following:

1. Compliance Signs www.ComplianceSigns.com 1-800-578-1245
2. Seton (formerly Champion America) www.seton.com 1-800-243-6624
3. Uline www.uline.com 1-800-295-5510
4. Alternate manufacturers having products meeting all of the requirements specified herein.

2.2 INSTALLATION

A. Install items according to manufacturers' written instructions, using fasteners appropriate for the substrate indicated, and as recommended by the manufacturer.

B. Install units level, plumb, and firmly anchored in locations and at heights indicated.

C. Comply with the Americans With Disabilities Act, 2010 ADA Standards, where applicable.

1. Refer to the Drawings and Manufacturer’s recommendations for installation.
2. In the event of a discrepancy between the Drawings and Manufacturer’s recommendation, contact the Architect for clarification prior to installation of items or blocking within walls.

PART 3 - CLOSEOUT

3.1 Closeout Documentation

A. For each type of product indicated, provide the following documentation at closeout:

1. Product Data
2. Installation Instructions, including ADA compliance.
3. Warranty Information

END OF SECTION 101453

SECTION 22 00 00 - PLUMBING GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions) and Division 0 as appropriate, apply to the Work specified in this Section.

B. Refer to all Sections, as well as the Specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding all work.

1.2 SCOPE OF WORK

A. Furnish all labor and material necessary to provide and install the complete plumbing portion of this Contract as called for herein and on accompanying drawings. Parts of the plumbing division may be bid separately or in combination, at the Contractor's option; however, it shall be the responsibility of the General Contractor to assure himself that all items covered in the Plumbing Division have been included if he chooses to accept separate bids.

B. Contractor shall refer to the Architectural and Civil drawings and install equipment, piping, etc. to meet building and space requirements. No equipment shall be bid on or submitted for approval if it will not fit in the space provided.

C. It is the intention of these specifications that all plumbing systems shall be furnished complete with all necessary valves, controls, insulation, piping devices, equipment, etc. necessary to provide a satisfactory installation that is complete and in good working order.

D. Contractor shall visit the site and acquaint himself thoroughly with all existing facilities and conditions which would affect his portion of the work. Failure to do so shall not relieve the Contractor from the responsibility of installing his work to meet the conditions.

E. This Contractor shall protect the entire system and all parts thereof from injury throughout the project and up to acceptance of the work. Failure to do so shall be sufficient cause for the Architect to reject any piece of equipment.

1.3 DEMOLITION

A. The contractor shall visit the site prior to bid to determine the extent of work required to complete the project.

B. Contractor shall coordinate demolition with owner. All equipment shall be salvaged for owner. Locate equipment as directed by owner. All equipment and materials not salvaged by the owner shall be removed from the site and discarded at the

contractors expense.

C. Contractor shall coordinate all work with general contractor and phase work as required by project.

D. All equipment piping, etc. required to be removed to accommodate the modifications shall be removed.

E. Contractor shall maintain services to existing facilities which shall remain during and after construction is complete.

F. Contractor shall coordinate any shutdown of services with the owner. It is intended that the building will remain occupied during construction. Contractor shall schedule shut down of services with the owner in order to prevent disruption of building occupancy.

G. Contractor shall be responsible for draining down of existing systems to complete demolition. All work shall be scheduled with the owner. Contractor shall also be responsible for refilling system and removing all air in order to return the systems to proper operating conditions.

H. All shutdown of services shall be done at night during a time period approved by owner. The systems shall be required to be back up and running each morning unless otherwise approved by the owner.

1.4 GROUNDS AND CHASES

A. This Contractor shall see that all required chases, grounds, holes and accessories necessary for the installation of his work are properly built in as the work progresses; otherwise, he shall bear the cost of providing them.

1.5 CUTTING AND PATCHING

A. Initial cutting and patching shall be the responsibility of the General Contractor, with the Mechanical Contractor being responsible for laying out and marking any and all holes required for the reception of his work. No structural beams or joists shall be cut or thimbled without first receiving the approval of the Architect. After initial surfacing has been done, any further cutting, patching and painting shall be done at this Contractor's expense.

1.6 FILL AND CHARGES FOR EQUIPMENT

A. Fill and charge with materials or chemicals all those devices or equipment as required to comply with the manufacturer's guarantee or as required for proper operation of the equipment.

1.7 BIDDING REQUIREMENTS AND RESPONSIBILITIES

A. Prime bidder is responsible for all work , of all trades and sub-contractors bidding

this project. It is the prime bidders responsibility, prior to submitting a bid to ensure that sub-contractors coordinate all aspects of the work between trades, sub-contractors, etc. to the fullest extent possible.

B. Prime bidder shall ensure that all sub-contractors, suppliers, equipment vendors, etc., obtain all necessary and pertinent contract document information pertaining to their work prior to the submission of a bid. Contractor shall realize that different sub-contractors may furnish equipment, accessories, devices, etc. necessary for a complete and working installation, that require provision of services by another sub-contractor or trade.

C. Bidders of all or any portions of this section or division are required to review all contract documents including but not limited to Architectural drawings, Structural drawings, Mechanical drawings, Plumbing drawings, Electrical drawings, etc. to coordinate requirements and responsibilities with and through prime bidder.

D. Bidders of all or any portions of this section or division, by furnishing a bid on a portion of the prime contract are indicating that they have received all contract documents and coordinated services provided under their portion of the work with the prime bidder; they are indicating that they have expressed any pertinent questions (which would result from a detailed, thorough review of the entire set of contract documents) to the prime bidder in accordance with Division 0 & 01 requirements, prior to bidding.

E. All timely, pertinent, questions provided in writing prior to bids, in accordance with Division 0 & 01 requirements, will be clarified, defined, or otherwise explained in a written addendum and/or addendums prior to bids, in accordance in Division 0 & 01 requirements.

F. It is not the intention of these contract documents to leave any issue relating to coordination between trades or sub-contractors vaguely defined. The intention is to define all issues, coordination matters, equipment requirements, sizes, routing, etc. to the satisfaction of the prime bidder, prior to receipt of bids.

G. Bidders of all or any portions of this section or division, by virtue of the submission of a bid to the prime bidder, are indicating that they have reviewed the entire set of contract documents with due diligence and regard for the Owner's desire for a comprehensive and complete bid proposal; that they have expressed all concerns or questions requiring clarification on matters of coordination between trades and/or sub-contractors; that they have expressed any such concerns or questions in writing in accordance with Division 0 & 01 requirements.

H. Prime bidders, by submission of a comprehensive bid on the project are indicating that the subcontractors selected in their bid have complied with all Division 0 & 01 requirements, that they have indicated in writing, prior to bidding, all questions or concerns requiring clarification and/or explanation and have documented any and all specific exclusions involving work that would generally be considered to be work of their trade. The prime bidder shall coordinate all work so that anything excluded by the bidder of all or any portions of this section or division, have been addressed

prior to bids in one of the following manners:

1. The work has been confirmed, by the prime bidder, to be work of another trade or subcontractor (whose proposal is also being accepted).
2. Clarification of the matter has been made through the prime design professional via written addendum and is clearly and mutually understood by the prime bidder and the party raising the issue/question, or seeking clarification.
3. The work has been accepted as the responsibility of the prime contractor directly.

1.8 MATERIAL AND EQUIPMENT

A. The term "provide" when used in the Contract Documents includes all items necessary for the proper execution and completion of the Work.

B. Specific reference in the Specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalog number, shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; and the Contractor, in such cases, may at his option use any article, device, product, material, fixture, form or type of construction which in the judgement of the Architect expressed in writing is equal to that specified.

C. Coordinate and properly relate all Work of this Division to building structure and work of all other trades.

D. Visit premises and become thoroughly familiar with existing conditions; verify all dimensions in field. Advise Architect of any discrepancies prior to Bid Date in accordance with Division 0.

E. Do not rough-in for any item or equipment furnished by others or noted "Not in Contract" (NIC), without first receiving rough-in information from physically examining the existing equipment, receiving specific cut sheet information from the Owner’s representative, other trades and/or Architect. Rough-in services for “NIC” equipment as required, as the work progresses.

F. Provide storage and protection for all equipment and materials in accordance with requirements of Division 0 & 01. Replace any equipment and materials damaged by improper handling, storage, or protection, at no additional cost to Owner.

G. Keep premises clean in accordance with requirements of Division 0 & 01.

1.9 SUBSTITUTIONS

A. Substitutions are only allowed by approval of the Architect prior to Bid Date as stipulated in Division 0 and/or Division 0 & 01.

B. Design of systems is based on specific equipment. If the use of other manufacturer's equipment, even though approved by Architect, involves additional cost due to space requirements, foundation requirements, increased mechanical or electrical services, the cost of such extra work shall be borne by manufacturer of substituted equipment.

Even though a manufacturer's name appears in the Contract Documents as having acceptable equipment, their equipment with different model numbers shall be classified as being a substitute to the equipment originally designed for and named in the Contract Documents. Substitute equipment, materials, etc., will not be allowed to deviate from Contract Document requirements. Furnish all options specified or reasonably implied from the contract documents. Specifically identify any variance is regard to submittal versus specified performance on the cover sheet of each submittal.

1.10 VALUE ENGINEERING (V/E):

A. While it may be in the project Owner's interest to consider the first cost money saving that may be generated via alternatives and options generated via participation in Value Engineering, Division 22 contractor shall realize that substantive offers of Value Engineering (V/E), if accepted by the Owner, constitute a design-build agreement (offer and acceptance) with the owner, and drastically change the design concept of the project, as developed by the Professional of Record identified on the Contract Documents.

B. Should contractor offer, and the owner accept value engineering options that alter aspects of the system design, equipment, performance and/or performance verification or monitoring of respective systems, Division 22 contractor shall provide duly licensed professional engineering consultants working on behalf of the Division 22 contractor (including sub-contractors and equipment vendors/manufacturers) to review, approve and take professional responsibility for performance and suitability of V/E hybrid systems, materials or operational changes related to respective V/E items. The Division 22 contractor's licensed professional engineering consultants and the Division 22 contractor assume any and all responsibility for the design and suitability in terms of performance, of hybrid systems installed, as Division 22 contractor's Professional of Record, absolving the original project Professional of Record (identified on the original Contract Documents, released for the original project Bid/Negotiation) from responsibility for the V/E hybrid systems portion of the work.

C. Division 22 contractor, via the offer and acceptance of value engineering items on the project agrees to provide professional engineering design services and take full and complete responsibility for the hybrid design. Further, the Division 22 contractor's (V/E Items) professional of record (either employees, or independent consultants to the Division 22 contractor) through the offer and acceptance of V/E items, agree to indemnify and hold harmless the project owner, the owner's original A/E team (Professional of Record on behalf of the owner for the original Contract Documents) their heirs and assigns in regard to the V/E changes and their impact on the Division 22 systems altered, affected or modified, in whole or in part. The Professional of Record shown on the original Contract Documents in regard to the systems altered, adjusted, revised, modified or otherwise affected by the value engineering items implemented, shall be absolved of design responsibility as a result of implementation of V/E items, and their original use of Engineering Seals used for original Contract Documents, shall not apply.

1.11 DRAWINGS AND SPECIFICATIONS

A. The specific intent of these Contract Documents is to provide the various systems, equipment, etc. to the Owner complete and in a thoroughly calibrated functional condition.

B. The Drawings shall not be construed as shop drawings. In the event of a possible interference with piping or equipment of another trade, items requiring set grade and elevations shall have precedence over other items Should any major interference develop, immediately notify the Architect.

C. In laying out Work, refer to mechanical, electrical, structural, and architectural drawings at all times in order to avoid interference and undue delays in the progress of the Work.

1.12 CODES AND REGULATIONS

A. Work shall be in full accord with the most stringent interpretation of the State Sanitary Code, local ordinances, building codes, and other applicable national, local, and state regulations.

B. Equipment shall conform to requirements and recommendations of the National bureau of Fire Underwriters and National Fire Protection Association (NFPA).

C. Items provided under this Division shall comply with the American National Standards Institute (ANSI) "Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People," ANSI A 117.1

D. In the possible event of conflict between codes or regulations and Contract Documents, the most stringent interpretation of either shall govern (provided if exceeds the requirements of other codes. In the event of an irreconcilable difference between codes or regulations notify the Architect/Engineer immediately.

E. In addition to the codes heretofore mentioned, all mechanical work and equipment shall conform to the applicable portions of the following specifications, codes and/or regulations:

1. National Electrical Code (NEC)
2. National Fire Protection Association (NFPA)
3. American Society of Mechanical Engineers (ASME)
4. American Gas Association(AGA)
5. Underwriters Laboratories (UL)

F. All materials, equipment and accessories installed under this Contract shall conform to all rules, codes, etc. as recommended by National Associations governing the manufacturer, rating and testing of such materials, equipment and accessories. All materials shall be new and of the best quality and first class in every respect. Whenever directed by the Architect, the Contractor shall submit a sample for approval before proceeding.

G. Where laws or local regulations provide that certain accessories such as gauges, thermometers, relief valves and parts be installed on equipment, it shall be understood that such equipment be furnished complete with the necessary accessories, whether or not called for in these Specifications.

H. All unfired and fired pressure vessels shall be built in accordance with the A.S.M.E. Code and so stamped. Furnish shop certificates for each vessel. Contractor shall provide and pay for first operating certificate as per State Fire Marshal Regulations.

1.13 FEES, PERMITS, AND TAXES

A. Obtain and pay for permits required for the Work of this Division. Pay fees in connection therewith, including necessary inspection fees.

B. Pay any and taxes levied for Work of this Division, including municipal and/or state sales tax where applicable.

C. All permits, fees, certificates, etc. for the installation, inspections, plan review, service connections locations, and/or construction of the work which are required by any authority and/or agencies having jurisdiction, shall be obtained and paid for by the Contractor.

D. The Contractor shall make all tests required by the Architect, Engineer or other governing authorities at no additional cost to the Owner.

E. The Contractor shall notify the Architect and local governing authorities before any tests are made, and the tests are not to be drawn off a line covered or insulated until examined

and approved by the authorities. In event defects are found, these shall be corrected and the work shall be retested.

F. Prior to requesting final inspection by the Architect, the Contractor shall have a complete coordination and adjustment meeting of all of his sub-contractors directly responsible for the operation of any portion of the system. At the time of this meeting, each and every sequence of operation shall be checked to assure proper operation. Notify the Architect in writing ten (10) days prior to this meeting, instructing him of the time, date and whom you are requesting to be present.

G. This project shall not be accepted until the above provisions are met to the satisfaction of the Architect.

1.14 MANUFACTURER'S DIRECTIONS

A. Install and operate equipment and material in strict accord with manufacturer's installation and operating instructions. The manufacturer's instructions shall become part of the Contract Documents and shall supplement Drawings and Specifications.

1.15 SUBMITTAL DATA

A. Submit shop drawings, project data, and samples in accordance with requirements of Division 0/and or Division 0 & 01.

B. Shop drawings shall consist of published ratings or capacity data, detailed construction drawings for fabricated items, wiring and control diagrams, performance curves, installation instructions, manufacturer's installation drawings, and other pertinent data. Submit drawings showing revisions to equipment layouts due to use of alternate or substitute equipment.

C. Where approved manufacturers and suppliers of equipment, materials, etc. are unable to fully comply with Contract Document requirements, specifically call such deviations to attention of Architect on submittals. Type deviations on a separate sheet; underlined statements or notations on standard brochures, equipment fly sheets, etc. will not be accepted.

D. Approval of submittals shall not relieve Contractor from furnishing required quantities and verifying dimensions. In addition, approval shall not waive original intent of Contract Documents.

E. Failure to obtain written approval of equipment shall be considered sufficient grounds for rejection of said equipment regardless of the stage of completion of the project.

1.16 REVIEW OF MATERIALS:

A. Whenever manufacturers or trade names are mentioned in these Plans or Specifications, the words "or approved equivalent" shall be assumed to follow whether or not so stated. Manufacturers or trade names are used to establish a standard of quality only, and should not be construed to infer a preference. Equivalent products which meet the Architect's approval will be accepted; however, these products must be submitted to the Architect a minimum of ten (10) days prior to the Bid Date.

B. Submission shall include the manufacturer's name, model number, rating table and construction features.

C. Upon receipt and checking of this submittal, the Architect will issue an addendum listing items which are approved as equivalent to those specified. THE CONTRACTOR SHALL BASE HIS BID SOLELY ON THOSE ITEMS SPECIFIED OR INCLUDED IN THE "PRIOR APPROVAL ADDENDUM", AS NO OTHER ITEM WILL BE ACCEPTABLE.

D. Prior approval of a particular piece of equipment does not mean automatic final acceptance and will not relieve the Contractor of the responsibility of assuring himself that this equipment is in complete accord with the Plans and Specifications and that it will fit into the space provided. Shop drawings must be submitted on all items of equipment for approval as hereinafter specified.

E. Before proceeding with work and/or within thirty (30) days after the award of the General Contract for this work, the Mechanical Contractor shall furnish to the Architect

complete shop and working drawings of such apparatus, equipment, controls, insulation, etc. to be provided in this project. These drawings shall give dimensions, weights, mounting data, performance curves and other pertinent information.

F. The Architect's approval of shop drawings shall not relieve the Contractor from the responsibility of incorrectly figured dimensions or any other errors which may be contained in these drawings. Any omission from the shop drawings or specifications, even through approved by the Architect, shall not relieve the Contractor from furnishing and erecting same.

G. Seven (7) sets of shop drawings shall be submitted to the Architect for approval. These submittals shall be supplied as part of this Contractor's contract. Any drawings not approved shall be resubmitted until they are approved. SUBMIT ALL SHOP DRAWINGS AT THE SAME TIME. NO SEPARATE ITEMS WILL BE ACCEPTED.

H. Submit one (1) sepia with two (2) blueline prints of all mechanical room layouts showing locations of all equipment, piping, etc. to insure all will fit in space provided. Submit drawings at 1/4" scale.

1.17 PROJECT RECORD DOCUMENTS

A. Keep Project Record Documents in accordance with requirements of Division 0 & 01.

B. During construction period, keep accurate records of installations made under this Division, paying particular attention to major interior and exterior underground and concealed piping, ductwork, etc.

C. The Contractor shall obtain at his cost, two sets of blueline prints of the original bid documents by the Architect. One set shall be kept on the site with all information as referenced below, and shall update same as the work progresses. The other set will be utilized to record all field changes to a permanent record copy for the Owner.

D. If the Contractor elects to vary from the Contract Documents and secures prior approval from the Architect for any phase of the work, he shall record in a neat and readable manner, **ALL** such variances on the blueline print in red. The original bluelines shall be returned to the Architect for documentation.

E. All deviations from sizes, locations, and from all other features of the installations shown in the Contract Documents shall be recorded.

F. In addition, it shall be possible using these drawings to correctly and easily locate, identify and establish sizes of all piping, directions and the like, as well as other features of the work which will be concealed underground and/or in the finished building.

G. Locations of underground work shall be established by dimensions to columns, lines or walls, locating all turns, etc., and by properly referenced centerline or invert elevations and rates of fall.

H. For work concealed in the building, sufficient information shall be given so it can be located with reasonable accuracy and ease. In some cases this may be by dimension. In others, it may be sufficient to illustrate the work on the drawings in relation to the spaces in the building near which it was actually installed. The Architect's/Engineer's decision in this matter will be final.

I. The following requirements apply to all "As-Built" drawings:

1. They shall be maintained at the Contractor's expense.
2. All such drawings shall be done carefully and neatly, and in a form approved by the Architect/Engineer.
3. Additional drawings shall be provided as necessary for clarifications.
4. These drawings shall be kept up-to-date during the entire course of the work and shall be available upon request for examination by the Architect/Engineer; and when necessary, to establish clearances for other parts of the work.
5. "As-built" drawings shall be returned to the Architect upon completion of the work and are subject to approval of the Architect/Engineer.

1.18 EXCAVATING AND BACKFILLING

A. Provide excavating and backfilling necessary for Work of this Division. Comply with provisions of Division 2, Site Work, if applicable.

B. Trenches shall be inspected by Code Authorities and/or Owner's Representative before and after piping is laid. Give Owner' Representative 24-hour notice for each inspection. If any trenches are filled without Owner's Representative inspection and as subsequently found to be deficient, the trenches shall be uncovered, inspected, and then re-filled, if requested by Owner's Representative.

C. Provide minimum 18 inches of cover or in compliance with local published frost line data (if greater than 18 inches) to finish grades or paving at water piping.

D. For piping, provide bell holes at trench bottom to assure uniform bearing. Accurately grade trench bottoms by instrument before laying any pipe.

E. Protect and maintain trenches in dry condition until piping has been inspected and approved. Immediately after approval, backfill trenches in tamped layers.

F. Compact fill to satisfaction of Architect and/or Owner's Representative.

1.19 CUTTING AND PATCHING

A. Comply with requirements of Division 0 and Division 0 & 01 regarding cutting and patching. Locate and timely install sleeves as required to minimize cutting and patching.

B. Cutting, fitting, repairing, patching, and finishing of Work shall be done by craftsmen skilled in their respective trades. Where cutting is required, cut in such a manner as not to weaken structure, partitions, or floors. Holes required to be cut must be cut or

drilled without breaking out around the holes. Where patching is necessary in finished areas of the building, the Architect will determine the extent of such patching and refinishing.

C. Repairing Roadways and Walks: Coordinate all roadway work with authorities having jurisdiction. Cut and/or bore under roadways for connection of utilities as required. Coordinate work through General Contractor. Where this contractor cuts or breaks roadways or walks to lay the piping, he shall repair or replace these sections to match existing, unless specifically identified as the responsibility of others.

1.20 PAINTING

A. Painting shall be provided by General Contractor's painting sub-contractor, unless specified otherwise. Leave exposed piping, materials, and equipment clean and free of rust, grease, dirt, etc. before and after painting.

B. Factory finished equipment, fixtures, and materials which are marred, chipped, scratched, or otherwise unacceptable shall be repaired or replaced under this Division to Architect satisfaction, at no additions cost to Owner.

C. Coordinate all painting requirements with prime bidder prior to bids.

D. Paint all exposed piping inside and outside of building. Label all piping after painting as required. Utilize industry standard paint colors for respective system unless directed otherwise by Architect. Review proposed color scheme with Architect/Engineer prior to ordering materials.

E. All piping shall be color coded per the following:

1.	Domestic Cold Water Piping	Yellow
2.	Domestic Hot Water Piping	Blue

1.21 CLEANING AND ADJUSTING:

A. Upon completion of his work, the Contractor shall clean and adjust all equipment, controls, valves, etc.; clean all piping, ductwork, etc.; and leave the entire installation in good working order.

1.22 OPERATING AND MAINTENANCE INSTRUCTIONS

A. Provide the Owner with three (3) copies of printed instructions indicating various pieces of equipment by name and model number, complete with parts lists, maintenance and repair instructions and test and balance report.

COPIES OF SHOP DRAWINGS WILL NOT BE ACCEPTABLE AS OPERATION AND MAINTENANCE INSTRUCTIONS.

B. This information shall be bound in plastic hardbound notebooks with the job name, Architect and Engineer names permanently embossed on the cover. Rigid board

dividers with labeled tabs shall be provided for different pieces of equipment. Submit manuals to the Architect for approval.

C. In addition to the operation and maintenance brochure, the Contractor shall provide a separate brochure which shall include registered warranty certificates on all equipment, especially any pieces of equipment which carry warranties exceeding one (1) year.

D. The operation and maintenance brochure shall be furnished with a detailed list of all equipment furnished to the project, including the serial number and all pertinent nameplate data such as voltage, amperage draw, recommended fuse size, rpm, etc. The Contractor shall include this data on each piece of equipment furnished under this contract.

1.23 GUARANTEE

A. The Contractor shall guarantee all materials, equipment and workmanship for a period of one (1) year from the date of final acceptance of the project. This guarantee shall include furnishing of all labor and material necessary to make any repairs, adjustments or replacement of any equipment, parts, etc. necessary to restore the project to first class condition. This guarantee shall exclude only the changing or cleaning of filters. Warranties exceeding one (1) year are hereinafter specified with individual pieces of equipment.

B. If the Contractor's office is in excess of a fifty (50) mile radius of the project, he shall appoint a local qualified contractor to perform any emergency repairs or adjustments required during the guarantee period. The name of the contractor appointed to provide emergency services shall be submitted to the Architect for his approval.

1.24 LOCAL CONDITIONS

A. The location and elevation of all utility services is based on available surveys and utility maps and are reasonably accurate; however, these shall serve as a general guide only, and the Contractor shall visit the site and verify the location and elevation of all services to his satisfaction in order to determine the amount of work required for the execution of the Contract.

B. The Contractor shall contact the various utility companies, determine the extent of their requirements and he shall include in his bid all lawful fees and payments required by these companies for complete connection and services to the building, including meters, connection charges, street patching, extensions from meters to main, etc.

C. In case major changes are required, this fact, together with the reasons therefor, shall be submitted to the Architect, in writing, not less than seven (7) days before the date of bidding. Failure to comply with this requirement will make the Contractor liable for any changes, additions and expenses necessary for the successful completion of the project.

1.25 MINOR DEVIATIONS

A. Plans and detail sketches are submitted to limit, explain and define conditions, specified requirements, pipe sizes and manner of erecting work. Structural or other conditions may require certain modifications from the manner of installation shown, and such deviations are permissible and shall be made as required. However, specified sizes and requirements necessary for satisfactory operation shall remain unchanged. It may be necessary to shift ducts or pipes, or to change the shape of ducts, and these changes shall be made as required. All such changes shall be referred to the Architect for approval before proceeding. Extra charges shall not be allowed for these changes.

B. The Contractor shall realize that the drawings could delve into every step, sequence or operation necessary for the completion of the project, without drawing on the Contractor's experience or ingenuity. However, only typical details are shown on the Plans. In cases where the Contractor is not certain about the method of installation of his work, he shall ask for details. Lack of details will not be an excuse for improper installation.

C. In general, the drawings are diagrammatic and the Contractor shall install his work in a manner so that interferences between the various trades are avoided. In cases where interferences do occur, the Architect is to state which item was first installed.

1.26 VALVE TAGS

A. Secure metal tags to all valves. Labeling on all valve tags shall include type of system the valve controls and the area of building, zone, or equipment number affected by valve operation. Tag shall be 2"minimum diameter brass, engraved with code number, service and size. A framed list of the valves, giving manufacturer's name, model number, type and location shall be mounted in the main basement equipment room.

1.27 LABELING MECHANICAL EQUIPMENT

A. All equipment furnished under Division 0 & 01of contract documents shall be labeled with permanent laminated plate secured to equipment. Units shall be labeled as indicated on plans and schedules.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 22 00 00

SECTION 22 05 19 – PLUMBING PIPING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions) and Division 00 and 01 as appropriate, apply to the Work specified in this Section.

B. Refer to all Sections, as well as the Specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding all work.

1.2 SCOPE OF WORK

A. This Section includes the following basic mechanical materials and methods to complement other Divisions and Sections.

1. Piping materials and installation instructions common to most piping systems.
2. Pipe Specialties.
3. Sleeves.
4. Valves and Unions.
5. Shock Absorbers.
6. Escutcheons.
7. Flashing.
8. Access Panels.
9. System Accessories.

B. Pipe and pipe fitting materials are specified in individual piping system Sections.

1.3 ELECTRICAL WORK

A. All electrical equipment shall have the U.L. Label and shall meet the standards of the National Electrical Code and NEMA.

PART 2 PRODUCTS

2.1 PIPE:

A. Sanitary Sewer Waste Lines Below Slab (PVC):

1. Piping below slab, unless otherwise shown or specified, shall be constructed of solid wall Schedule 40 PVC "DWV" plastic pipe and fittings conforming to ASTM D265 and ASTM D1785 with solvent welded joints.

B. Domestic Cold and Hot Water Lines:

1. All such lines above grade shall be Government Type "L", hard copper water tubing of standard weight and thickness as made by Mueller, Chase, Anaconda or equivalent, unless indicated otherwise. Use 95-5 lead-free solder on all piping above slab. Use Silfos 1000° lead-free solder on all piping beneath the slab.
2. In certain areas, type "L" soft copper without joints below slab shall be used only where indicated on the Plans. Piping shall be completely insulated.
3. Domestic cold-water lines penetrating concrete slabs shall be wrapped with "Protect-O-Sleeve" vinyl flexible tube as manufactured by Robert H. Harris Co., or equivalent. Sleeve shall have a minimum thickness of .025” (0.635 mm).

4. Domestic cold-water piping below grade on site shall be Schedule 40 PVC plastic pipe with solvent welded joints, or slip joint fittings with EPDM seals. Provide thrust blocks all at changes in direction. Installation shall be in accordance with manufacturer's recommendations.

2.2 PIPE SPECIALTIES

A. Dielectric unions shall be used between copper and iron pipe.

2.3 PIPE WARNING TAPE AND TRACER WIRE

A. Provide warning tape for buried piping as per the following:

1. During the backfilling process, all PVC and Ductile Iron mains, service lines and system appurtenances shall have a continuous warning tape placed immediately above them and throughout their length at a depth of eighteen (18) inches above the utility line surface.
2. The tape shall be six (6) inches wide. Tape material shall be formulated from 100 percent virgin polyolefin resins. Resins shall be pigmential for chemical stability and resistance to sulfide staining (color fastness).
3. Tape shall be constructed by the mechanical (non-adhesive) lamination of two plies of three layers blown film in such a manner as to produce a bi-axially oriented structure. The tape shall be able to provide a 700 percent elongation prior to rupture as per ASTM-D882.
4. The tape shall meet or exceed the standards provided in the Materials Specification List, included in these Standards. The warning tape shall be manufactured with a permanent APWA line color pigment at a maximum of every thirty (30) inches along its length, be imprinted with a continuous warning message as follows:
   a. “CAUTION: (State Type) LINE BURIED BELOW”
5. At tees, tape ends, etc., the warning tape shall be tied together (spliced) with knot to create a continuous warning tape throughout the length of the pipeline and associated branch lines, appurtenances, etc.

B. Provide tracer wire for buried piping as per the following:

1. In addition to the installation of warning tape, copper tracing wire is to be installed with all PVC mains. This includes all mains, and individual hydrants. The tracing wire shall be taped, using electrical tape, on top of the pipe at ten (10) foot centers, for the total length of the pipe.
2. The tracing wire shall be 12 AWG (Average wire gauge), solid core, copper wire (solid core meaning one (1) single continuous strand of copper wire). In addition, the wire insulating coating (jacket) shall be blue in color and shall have 45 mils of polyethylene insulation thickness and high molecular weight. In addition, the tracing wire shall be HMW-PE and rated for UL 600V construction. The wire shall be suitable for wet or dry applications.
3. The wire size (gauge) shall be continuously affixed (printed on) the entire length of all tracing wire coating and shall be easily read.
4. Where a splice is required, or when a three (3)-way splice is necessary, the wires shall be joined together with an appropriate size (blue) wire nut which shall then be placed inside a 3M brand Direct Bury Splice kit (DBR), or approved equal, of appropriate size. No bare wire shall be left exposed anywhere. All wires shall be spliced to all other wires for a continuous tracing wire system.
5. On all hydrants and above ground appurtenances, the tracing wire shall be run up and protected. This wire end shall not be bare, but shall have the coating jacket intact. Location and frequency of test boxes shall be as directed by P.M., or

designee. Test boxes shall be required where hydrants are not used or where hydrant spacing exceeds 500 feet.

6. No electrical connections of the tracing wire to any metal pipes or metal service lines will be allowed and care shall be taken to ensure that the tracing wire is not damaged during installation.
7. The tracing wire will be tested for continuous signal (continuity test) and shorts to ground across all main and service lines before asphalt is installed, and prior to sub grade preparation. Tracing wire must be able to conduct a continuous signal before pipe is accepted.

2.4 PIPE HANGERS AND SUPPORTS

A. This Contractor shall furnish and install all foundations and supports required for his equipment unless indicated otherwise on the Drawings.

B. This Contractor shall furnish and install all escutcheons, inserts, thimbles, hangers, etc. required for the proper support and installation of his equipment and piping and he shall cooperate with other trades in locating and placing these items.

2.5 PROVIDE SLEEVES FOR ALL PIPES PASSING THROUGH WALLS, FLOORS, BEAMS, ETC.

A. Sleeves passing through structural members or concrete footings shall be of cast iron or Schedule 40 steel pipe. Sleeves passing through nonstructural walls or floors shall be of 26-gauge galvanized iron. Joints between sleeves and pipes passing through floors shall be made weather tight with plastic materials. Where pipes pass through water proofing membrane, flashing sleeves shall be installed.

B. Provide Grinnell, Fee & Mason, or equivalent malleable iron split ring hangers with rod supports throughout. Strap hangers or wire will not be accepted.

C. Maximum spacing of hangers for cast iron pipes shall be 5 ft.; for other than soil, use 10 ft.

D. Provide galvanized iron shields between hangers and pipe covering.

E. Provide Grinnell, Fee & Mason, Crane or equivalent heavy steel riser clamps on vertical risers at floors to support pipes.

F. Provide producer specialty, Jones Manufacturing or equal chrome plated brass escutcheons wherever pipes pass through floors, walls, or ceilings in exposed or finished areas.

G. All piping projecting from chases shall be rigidly supported in the wall or chase. Loosely supported fixtures or accessories will not be accepted.

2.6 VALVES AND UNIONS

A. Furnish and install all valves, unions, stops, connections, etc. shown on plans and necessary to make a complete system in working order. Provide valves on inlet and outlet of all equipment and fixtures and on branch lines to fixtures or groups of fixtures.

B. All valves, unions, etc. where pipe is chrome plated shall have similar finish. All exposed supplies to plumbing fixtures shall be chrome plated.

C. Domestic water valves (below grade): M & H AWWA Series C-509 resilient gate valve with low torque operation, positive shut-off, O- Ring seals, full epoxy coating and square valve stem end. Provide two (2) adjustable "TEE" handle valve wrenches to be turned over to the owner after construction is complete.

D. Select Valves with the following ends or types of pipe/tube connections:

1. Copper Tube Size 2 Inch and Smaller: Solder ends, except provide threaded ends for heating hot water.
2. Steel Pipe Sizes, 2 Inch and Smaller: Threaded or grooved end.
3. Steel Pipe Sizes, 2-1/2 Inch and Larger: Grooved end or flanged.

PART 3 EXECUTION

3.1 INSTALLATION OF PIPING:

A. All pipe shall be true and straight, without sags or traps.

B. The Contractor shall exercise care in cleaning joints after making cuts on pipe to prevent pipe particles from entering the system.

C. All pipe fittings shall be same as piping specified unless indicated otherwise.

D. Arrange, install piping approximately as indicated, straight, plumb and as direct as possible; form right angles, or parallel lines with building walls. The most practical appearance of piping runs is required. Keep pipes close to walls, partitions, ceilings; off-set only where necessary to follow walls as directed.

E. Before installing piping, check plumbing drawings with architectural, mechanical, structural, electrical drawings; make accurate layout of plumbing and HVAC piping. Where interferences may appear and departures from indicated arrangements are required, consult with other trades involved; come to agreement as to changed locations and elevations of piping; obtain approval of proposed changes. Note runs of other contractor's piping and large conduits and cooperate to achieve neat appearance.

F. Unless otherwise indicated, conceal all piping in building construction in finished areas. Install such piping in time so as not to cause delay to work of other trades and to allow ample time for tests and approval; do not cover before approval is obtained.

G. Locate groups of pipes parallel to each other and building lines; space them at distance to permit access for servicing, valves, and to create most practical appearance when racked with conduits, refrigerant, etc., provided by other contractors.

H. Keep fixture branches concealed to points above floor close to fixtures; expose only as much as necessary for final connection. Rigidly support pipes projecting from walls, chases, etc. in wall or chase to make firm, well-braced installation. Loosely supported pipe or accessory is not acceptable.

I. Install horizontal piping to coordinate with other trades and install without sags or humps.

J. Grade inside sewer piping at uniform slope of 1/4 inch per foot, minimum; where this is impossible, maintain slope as directed but in no case less than 1/8 inch per foot. Waste lines 3 inches and smaller must grade at minimum 1/4 inch per foot. See Drawings for fall on exterior sewer lines.

K. Grade other piping as specified under heading or service where used, or as directed.

L. Keep piping free from scale and dirt, protect open pipe ends wherever work is suspended during construction. To prevent foreign bodies entering and lodging in pipe, use temporary plugs or other approved material.

M. Where changes in pipe sizes occur, do not bush down; use only reducing fittings. For drainage piping changes in direction, use long sweep bends where possible; otherwise, short sweep 1/4 bends or combination Y and 1/8 bends; also, Ys in combination with other bends.

N. Provide shut off valves at all supply connections to all equipment. Supplier of equipment shall provide rough-in drawings and this contractor shall fully connect all items, supply necessary piping and fittings as required, unless otherwise noted individually.

O. Buried thermoplastic piping systems shall be installed in accordance with ASTM D2321.

P. Do not locate valves with stems below horizontal.

Q. Locate valves for easy access and operations. Where concealed, notify General Contractor of exact location in order that he may leave openings for access panels. Provide access panels.

R. Provide unions, screwed or flanged, where indicated, and in following locations even if not indicated.

S. In connection to equipment requiring disconnection for repairs or replacement. Locate between shut-off and equipment.

T. Approved expansion joints or flexible couplings shall be provided as necessary.

U. Care shall be taken in making up pipe and fittings such that the pipe does not extend into fitting sufficiently to reduce the waterway.

V. Standard, one-piece reducing fittings of approved design shall be used wherever a change in size is made. Changes in pipe sizes shall not be made by means of reducing flanges.

W. Bushings may be used only where standard, one-piece reducing fittings are not available and shall be subject to the following:

1. Bushings shall be of the face or flush type.
2. Bushings shall not be used in elbow fittings.
3. Bushings shall not be used when the reduction in size of the outlet is less than ".
4. Bushings shall not be used in more than one outlet of any tee or two outlets of any cross fitting.

3.2 INSTALLATION OF VALVES

A. Use ball and butterfly valves for shut-off duty.

B. Locate valves for easy access and provide separate support where necessary.

C. Install valves and unions for each fixture and item of equipment arranged to allow equipment removal without system shutdown. Unions are not required on flanged devices.

D. Install three-valve bypass around each pressure reducing valve using throttling-type valves.

E. Install valves in horizontal piping with stem at or above the center of the pipe.

F. Install valves in a position to allow full stem movement.

G. All valves, unions, etc. where pipe is chrome plated shall have similar finish. All exposed supplies to plumbing fixtures shall be chrome plated.

H. All valves, on insulated piping shall be complete with extended lever handle stem.

3.3 TEST

A. Make such tests of work as specified, or required by Architect or by State and Municipal Bureaus having jurisdiction, and under their supervision. Perform tests in presence of Architect's representative. Notify Architect two days prior to testing.

B. Provide apparatus, temporary piping connections, or other requirements necessary for tests. Take precautions to prevent damage to building or contents by tests. Contractor is required to repair and make good at his expense damage so caused.

C. For Drain, Waste, and Vent piping, use hydrostatic test to 10 feet of head. Do not use compressed air or gas.

D. Correct leaks, defects, or deficiencies discovered as result of tests. Repeat tests until test requirements are fully complied with. Caulking of pipe joints to remedy leaks is not permitted, except on lead and oakum joints.

3.4 STERILIZATION

A. Sterilization all water lines in strict accordance with State Board of Health requirements. After flushing out, obtain approval of water sample analysis from State Board of Health and submit approval report to Architect.

END OF SECTION 22 05 19

SECTION 22 11 16 WATER SUPPLY

1.1 SERVICE

A. The Contractor shall extend water throughout the project as indicated on the Drawings.

CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANY PRIOR TO BID TO DETERMINE THE EXTENT OF THEIR REQUIREMENTS, PAY ALL COSTS FOR CONNECTION AND COMPLETE WORKING INSTALLATION INCLUDING TAP AND METER.

1.2 GENERAL

A. All water supply piping shall be of materials hereinbefore specified. Make provisions for expansion and contraction of hot water lines by means of expansion bends or loops as required.

B. All water lines shall be disinfected in accordance with the State of Louisiana Sanitary Code. Submit three (3) copies of "Certificate of Performance" at completion of the project.

C. Water lines run underground shall have a minimum of 42" cover to finished grade.

D. Make up the complete water supply system. Connect to all fixtures and outlets requiring water.

E. Domestic water cut-off valves on exterior of building shall be installed with cast iron frame and cover (marked "Water") in concrete pad as detailed on the Drawings.

1.3 TESTING

A. All domestic water lines, unless elsewhere specified, shall be tested under 200 psi hydrostatic pressure for a minimum of five hours.

END OF SECTION

SECTION 22 13 13 - WASTEWATER TREATMENT PLANT

SERVICE

The contractor shall provide a new Hoot Waste Water Treatment Plant per the parameters stated in the following specification.

All work shall be in strict accordance with 2021 International Plumbing Code with amendments, Louisiana Sanitary Code, IBC, 10 State Standards, and with all local codes. Piping shall be routed as shown on Plans or in an acceptable manner to meet building conditions. Provide venting as required.

PERMITS

Contractor shall not begin installation of the sewer treatment plant until LDH and LDEQ permits have been obtained.

GENERAL

The contractor shall furnish and install one complete extended aeration wastewater facility will all- necessary parts and equipment as described in the following specifications. The basic plant shall consist of pretreatment, aerated flow equalization, aeration, with fix film, final clarification, de-nitrification and it shall be equipped with motors, blowers, controls, housing diffuser bars, effluent weir, and other necessary internal piping, mechanical equipment and electrical controls. Tanks and chambers shall be constructed of reinforced precast concrete with a 5000 PSI, 28 day compression strength or ¼" metal – blasted – 11 mils of coal tar epoxy applied.

Primary treatment shall be accomplished in the aeration chamber of the facility. All incoming wastewater shall enter and be retained in the aeration chamber for no less than _24__ hours. (Retention time depends on sewer strength.) Air shall be introduced along one wall near the bottom to produce a mixing and rolling action in the tank. The spiral rolling action created by the introduction of air shall insure thorough mixing of the incoming organic material with the activated sludge to prevent short-circuiting of the flow and assure adequate retention of all organic materials.

Secondary treatment of the wastewater shall be accomplished in a clarification chamber. The effective holding capacity of the clarifier shall be calculated after excluding the lower two-thirds, by height, of the hopper(s) and shall still be of sufficient volume to provide in excess of four hour retention of the daily flow. The chamber shall be designed so that the clarifier will

successfully perform its function of solids separation without hydraulic upset even when the significant runoff period is eight hours.

Capability of a plant of this type to perform as outlined, when built by an approved manufacturer, shall be certified by an independent testing laboratory. The manufacturer shall make certified data available to the regulatory agency, customer, consultant and contractor as required.

OPERATING CONDITIONS

The wastewater treatment facility shall be a Hoot Model H-46,500C-SC-EX shown on drawing number H-46,500C-SC-EX capable of treating 46,500 gallons per day of sanitary sewage. This facility shall be designed and built to serve a population equivalent of 465 with a total loading and treatment capability of 77.76 pounds of five day BOD per day.

PRETREATMENT:

A trash trap shall be used for pretreatment of the influent sewage. The trash trap shall be properly baffled to prevent short-circuiting of the flow and to hold back settled and floating material so as to prevent its entry to the aeration chamber. Inspection covers shall be installed on the lid of the trash trap. They shall be located above the inlet and the outlet of the tank to permit access and inspection. In addition, a clean-out opening shall be located in the center of the tank and risers shall be installed to grade to permit tank pumping. Total holding capacity of the trash trap shall be 6,750 gallons.

AERATED FLOW EQUALIZATION FACILITY SPECIFICATIONS

GENERAL :

An aerated flow equalization facility shall be installed to provide temporary storage capability for anticipated surges in the daily wastewater flow. The facility shall be designed to protect the hydraulic reliability of the secondary wastewater treatment system when the peak to average diurnal flow ratio exceeds four to one or when a significant runoff period of less than eighteen hours per day is encountered. The aerated flow equalization facility shall be designed to precede a wastewater treatment plant of 62,500 gallons per day rated capacity. The total holding capacity of the flow equalization facility shall be 15,700 gallons.

The flow equalization facility shall be located downstream of preliminary treatment equipment such as pretreatment chambers, comminutors or bar screens so that grit and other debris will be removed. The facility shall be located upstream of all secondary wastewater treatment plant tankage so that

all raw wastewater flow shall pass into the equalization tank for controlled application to the aeration tanks.

EQUALIZATION MECHANICAL EQUIPMENT:

Aerobic conditions shall be maintained within the flow equalization facility at all times. Aeration equipment shall include DUPLEX_ model 33-URAI-J_ Roots blower(s) or equal. The blower(s) shall provide 60 CFM of free air at the rated operating pressure of _5_ PSI (1580 Rpm's). The blower unit(s) shall be provided with inlet air filter/silencer(s), discharge pressure relief valve and discharge flexible coupling connector to the air header assembly. If more than one blower is provided, check valves shall be included in the discharge piping. Blower connection to the drive model motor(s) shall be with conventional v-belt power transmission drive assembly.

_DUPLEX seventeen hundred fifty RPM, _208 volt _3 phase, 60 hertz, _3 horsepower, TEFC electric motor(s) shall be used to drive the blower(s). The motor(s) shall be mounted in a weatherproof cabinet on an adjustable slide base for ease of motor alignment and belt tension adjustment.

AERATION

Air shall be injected into the tankage through diffusers containing a minimum of one air diffusion orifice for each five inches of equalization tank length. A drop pipe to each diffuser shall be connected to the common air header by means of a galvanized release coupling. One air adjustment valve shall be provided for each drop pipe upstream of the disconnect to enable a proper balance of air distribution to be obtained even when a diffuser has been removed for inspection.

AUTOMATIC BYPASS PORT

The anticipated maximum flow level in the aeration tank of the flow equalization facility is at the same depth as the normal liquid level in the secondary treatment plant. To protect against the possibility of line back up or tank flooding during a power outage a six inch diameter emergency overflow port shall be installed above the normal maximum liquid level and shall interconnect the flow equalization tanks with the aeration chambers of the secondary wastewater treatment facility. This shall insure that all wastewater flow, even when power is not being supplied to the flow equalization equipment, must pass through the secondary facility before being discharged.

EQUALIZATION ELECTRICAL CONTROLS

Electrical controls shall be mounted in a separate weatherproof cabinet (Nema 4x). The cabinet shall be equipped with a locking device to restrict access to the controls to authorized persons. Controls shall include: _208_volt _3_phase (FLA=11) motor control center with motor starter, motor circuit breaker and thermal overload protection. The motor control center shall be factory-wired to the motor with a resilient power cable and tested under actual operating conditions prior to shipment to the jobsite.

TIME DOSE DISCHARGE PUMPS

Duplex alternating __GOULDS__ model __WS1538D3M___ pumps wired for _208_ volt_3 phase _60__Hertz operation shall be included to apply the flow equalization tank influent to the inlet aeration tankage. Each of the pumps shall be capable of delivering _100_ gallons per minute against a total dynamic head of _15_feet. The pump motors shall be _1.5_ horsepower _1750_ RPM with motor windings sealed against moisture and shall operate in clean, high dielectric oil for lubrication and cooling. Pumps will run for _2_ minutes / _100_GPM, then off for _4.2_ minutes to deliver_46,500_ gpd.

ELECTRICAL CONTROLS

The flow equalization tank pumps shall be activated automatically by mechanical level control monitors. The level controls shall be designed to automatically alternate the pumps at each cycle to equalize wear. An override control shall activate the lag pump automatically if liquid level in the equalization tank rises six inches above the normal operating volume of the lead pump. In addition, a horn and dual (audible & visual) high water alarm shall be activated if liquid level rises six inches above the activating point of the lag pump.

Time dosing electrical controls shall be mounted within a weatherproof Nema IV enclosure. Controls shall include: duplex pump motor control center with timer, _208_ volt _2_ phase, three phase protection (if applicable), control transformer, electrical alternator, visible pump run indicator, reset button for overload or high-water alarm, and with “Hand-Off-Auto” selector switches.

PRIMARY TREATMENT

AERATION

The aeration chamber shall have a capacity of 47,127 gallons to provide approx. 25 hour retention of the daily wastewater flow. Filets shall be installed in the bottom of the chamber parallel to the treatment flow to insure uniform tank roll and prevent deposition of solids. Overall design of the chamber shall be such that effective mixing shall be maintained to provide optimum treatment.

AIR DISTRIBUTION PIPING

Galvanized schedule forty piping and galvanized malleable iron pipe fittings shall be used throughout the air distribution system. Individual galvanized pipe unions, dresser couplings and flexible couplings with stainless steel clamps shall be provided as necessary in the air distribution system. Individual air control valves shall be installed in the air distribution piping as required to allow individual adjustment of each separate element within the system.

Primary air distribution shall be provided through a galvanized air header. The air header shall have individual drop pipes connected to the header assembly for air supply to individual diffuser assemblies. Each drop pipe may be equipped with an air adjustment valve to control airflow individually to each diffuser assembly. In addition, a quick release coupling or union shall be provided for each drop pipe and diffusers assembly downstream from the air adjustment valve.

AIR DIFFUSION SYSTEM

Diffusers shall be provided parallel to the treatment flow in the aeration chamber. Each diffuser assembly shall be installed not more than twelve inches off the floor of the chamber no more that twelve inches away form the chamber sidewall. Diffusers shall be SSI part number AFTN3100 and shall be designed to insure uniform mixing within the aeration chamber. Fine air bubble distribution effected by the diffusers shall be adequate to provide all oxygen necessary for the Aerobic Digestion process while maintaining an acceptable dissolved oxygen level in the final plant effluent.

NOTE All diffuser assembly MUST be installed along the length of the aeration chamber and crossovers must be a least 10” and flexible.**

AERATION MECHANICAL EQUIPMENT

Air required for the treatment process shall be provided by _TWO_ model _47-URAI-J_ Dresser Roots Blower (s). The blower(s) shall be of the rotary positive displacement type and shall provide _200_ CFM of free air at the rated operating pressure of _5_ PSI (@1700 RPM). The blower unit(s) shall be provided with inlet air filter/silencer(s) discharge pressure relief valve and discharge flexible coupling connector to air header assembly. If more than one blower is provided, check valves shall be included in the discharge piping. Blower connection to the drive motor(s) shall be with conventional v-belt power transmission drive assembly.
Note-At least 2 belts.

_TWO_seventeen hundred fifty RPM, _208_volt _3_phase, 60 Hertz, _7.5_ horsepower(FLA=25) , totally enclosed fan cooled electric motor(s) shall be used to drive the blower(s). When operating at the rated horsepower the motor(s) shall reach a maximum speed that shall exceed ninety-seven percent of the reference synchronous speed. The motor(s) shall for the facility shall be designed and rated for continuous duty application and shall not overload or exceed motor nameplate ratings when operating as outlined for this facility.

WELDED ALUMINUM EQUIPMENT HOUSING FRAME

Frame shall be 2" X 2" ¼" aluminum. Mounting plate shall be ¼" reinforced metal with rubber mounts, to absorb shock and noise. Adjustment slide base for ease of motor alignment and belt tension adjustment shall be furnished. Cabinet shall be reinforced fiberglass, mounted to frame with heavy-duty aluminum piano hinge. (3" Width – 1/8: with 3/8: pin)

ELECTRICAL CONTROLS

Electrical controls shall be mounted in a separate weatherproof cabinet (Nema 4x). The cabinet shall be equipped with a locking device to restrict access to the controls to authorized persons. Controls shall include: _208_volt _3_phase motor control center with motor starter, motor circuit breaker and thermal overload protection. The motor control center shall be factory-wired to the motor with a resilient power cable and tested under actual operating conditions prior to shipment to the jobsite.

TIME CLOCK

Electrical controls shall include a fifteen-minute multiple; twenty-four hour time clock to permit cycled automatic operation of the treatment facility throughout the day. A three-position "hand-off auto" selector switch shall be installed to allow the treatment plant aeration unit to operate either on a continuous run basis or according to the cycle established on the time clock.

CLARIFICATION

A final clarification chamber shall be provided for secondary treatment of the daily flow. It shall have a total holding capacity of _10933_gallons. The effluent weir shall be of sufficient length to provide an overflow rate of _2447_gallons per lineal foot per day and surface area of the tank shall provide a setting rate of _232.5_ gallons per square foot per day.

An inlet baffle zone shall be provided at the flow inlet to the clarification chamber. All transfer turbulence shall be dissipated upstream of the inlet baffle and its performance shall be adequate to eliminate all turbulence downstream from the baffle. The area contained behind the baffle shall allow adequate capacity and retention for surfacing of all buoyant material entering the clarifier. The baffle shall extend above the surface and adequate distance to entrap all floating material and it shall extend below the transfer port a sufficient distance to eliminate passage of buoyant material or surface turbulence.

Flows shall be directed out of the inlet baffle zone into the hopper zone. All transfer shall be accomplished below the bottom of the inlet baffle into the upper one-third area of the hopper zone. In this zone sludge shall settle by gravity to the bottom of the hopper(s). Here settled sludge shall be returned to the aeration or pretreatment chamber by airlift pumping.

Clarified liquids shall be contained in the settling zone above the hopper area for gravity settling. From here they shall be hydraulically displaced to the outlet zone. The outlet zone shall consist of an adjustable sideplate effluent weir trough and outlet. The outlet baffle shall extend into the surface of the liquid to a point not exceeding three inches and shall extend above the surface an equal distance. The baffle shall run the entire length of the outlet zone and shall totally separate the surface liquids of the settling and outlet zones. Centered in the outlet zone parallel to the outlet baffle shall be an effluent weir trough. The trough shall be capable of being adjusted from end to end to provide adequate fall to the plant outlet and shall each be capable of being leveled from side to side and end to end to the level of the liquid surface in the chamber.

AIRLIFT SLUDGE RETURN

A galvanized and PVC schedule forty or greater airlift sludge return shall be provided for the hopper(s) in the clarification chamber. Air shall be supplied to the airlift(s) through a secondary air distribution system connected to the main air header of the treatment plant. Individual air manifold piping shall be installed for each airlift and shall be equipped with a valve for fine adjustment or shut-off.

The airlift(s) shall be constructed of schedule forty galvanized steel and pvc pipe and fittings. A removable cleanout plug shall be installed at the top of the vertical airlift pipe. Piping shall be arranged so that returned sludge is deposited in the aeration chamber at a point, which prevents short-circuiting, and with positive visible return. The airlift pump(s) shall be designed and manufactured of adequate size pipe and with sufficient air supply to provide a pumping rate in excess of the total daily flow. Air required to achieve this shall be provided in excess of that necessary for aeration, mixing and treatment. The legs shall be used to position the inlet correctly at the base of the hopper. Inlets that are cantilevered or cut out to rest on the bottom of the hopper will restrict sludge flow and shall not be considered.

AIRLIFT SURFACE SKIMMER

An airlift surface skimming system shall be installed in the settling zone of the clarification chamber(s). The airlift skimmer(s) shall be constructed of schedule forty galvanized and PVC pipe and fittings.

The skimmer inlet(s) shall be equipped with an adjustable cone. The inlet cone(s) shall be provided with attached flexible connector for installation and adjustment of the cone(s) on the airlift assembly.

A removable cleanout plug shall be provided at the top of the skimmer airlift pipe where it joins the horizontal discharge line. The discharge line shall return back to the aeration or pretreatment chamber for final discharge. The skimmer air supply shall be provided through a secondary air distribution system connected to the main air header of the treatment plant. Air adjustment/shut-off valve(s) will be installed in the skimmer air manifold supply line

CHLORINE CONTACT TANK: N/A EXISTING

Length: _11.5'__ Width: _4.5' Depth 43" & 36"

Capacity(gal): 1302__

Retention Time: _40_Minutes Baffles: _3

Ventilation: YES Location: ON DISCHARGE Model: 4 TUBE_

V- Notch Weir for plant flow
Location: _X_ In ☐ After Chlorine Contact Chamber
Model: __60 DEGREE_V-notch

Note- These specs call diffuser assembly to be installed along the length of each aeration chamber. The aeration roll will be on the short side of the chambers.

All Crossovers from chamber to chamber must be at least 10" and flexible.

All v-belt transmission drive assembly must have at least two belts. All modular's must consist of _2_ casting max.

END OF SPECS

SECTION 22 13 16 WASTE WATER DISPOSAL

1.1 SERVICE

A. Extend sanitary sewer waste and vent lines as indicated on Plans.

1.2 GENERAL

A. The system of sewage and drainage in general shall be as hereinbefore specified.

B. All work shall be in strict accordance with the 2021 International Plumbing Code with Louisiana Amendments, the Louisiana Sanitary Code, 10 States' Standards, and in accordance with all local codes. Piping shall be routed as shown on Plans or in an acceptable manner to meet building conditions. Venting shall be as shown on plumbing riser diagrams.

C. Connections between traps and cast iron pipes are to be made with heavy brass ferrules or cast iron pipe.

D. All p-traps installed below slab shall be deep-seal p-traps.

E. Provide reducers, increasers, special flanges, and fittings where required between piping work and fixtures in order to connect and complete work and render it ready for use. Make any offsets required to avoid construction.

F. All lines 2" and smaller shall be sloped 1/4" per foot; all lines 3", 4" and 6" shall be sloped 1/8" per foot. 8" pipe shall be sloped at 0.4' per 100' in accordance with 10 State's Standards. Piping shall be laid so slope is continuous.

G. All sewer vents shall extend 8" above roof and terminate in an appropriate flashing collar. No vents shall penetrate roof within 48" of an exterior wall. Offset in ceiling as required. All back vents shall be taken off as near trap as possible.

1.3 TESTING

A. Test all sanitary sewer waste and vent lines inside building with a minimum of 10' water head for 15 minutes.

B. All exterior sewer piping shall be air tested under 5 psi for 15 minutes.

END OF SECTION

SECTION 26 00 01 - ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions as appropriate, apply to the Work specified in this Section.

B. Refer to all Electrical Divisions of the Specifications as well as the Specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding electrical work.

1.2 BIDDING REQUIREMENTS AND RESPONSIBILITIES

A. Prime bidder is responsible for all work, of all trades and sub-contractors bidding this project. It is the prime bidder's responsibility, prior to submitting a bid to ensure that sub-contractors coordinate all aspects of the work between trades, sub-contractors, etc. to the fullest extent possible.

B. Prime bidder shall ensure that all sub-contractors, suppliers, equipment vendors, etc., obtain all necessary and pertinent contract document information pertaining to their work prior to the submission of a bid. Contractor shall realize that different sub-contractors may furnish equipment, accessories, devices, etc. necessary for a complete and working installation, that require provision of services by another sub-contractor or trade.

C. Bidders of all or any portions of this section or division are required to review all contract documents including but not limited to Architectural drawings, Structural drawings, Mechanical drawings, Plumbing drawings, Electrical drawings, etc. to coordinate requirements and responsibilities with and through prime bidder.

D. Bidders of all or any portions of this section or division, by furnishing a bid on a portion of the prime contract are indicating that they have received all contract documents and coordinated services provided under their portion of the work with the prime bidder; they are indicating that they have expressed any pertinent questions (which would result from a detailed, thorough review of the entire set of contract documents) to the prime bidder in accordance with the general provisions of the Specifications requirements, prior to bidding.

E. All timely, pertinent, questions provided in writing prior to bids, in accordance with the general provisions of the Specifications requirements, will be clarified, defined, or otherwise explained in a written addendum and/or addendums prior to bids, in accordance with the general provisions of the Specifications requirements.

F. It is not the intention of these contract documents to leave any issue relating to coordination between trades or sub-contractors vaguely defined. The intention is to define all issues, coordination matters, equipment requirements, sizes, routing, etc. to the satisfaction of the prime bidder, prior to receipt of bids.

G. Bidders of all or any portions of this section or division, by virtue of the submission of a bid to the prime bidder, are indicating that they have reviewed the entire set of contract documents with due diligence and regard for the Owner's desire for a comprehensive and complete bid proposal; that they have expressed all concerns or questions requiring clarification on matters of coordination between trades and/or sub-contractors; that they have expressed any such concerns or questions in writing in accordance with contract document's General Provisions requirements.

H. Prime bidders, by submission of a comprehensive bid on the project are indicating that the subcontractors selected in their bid have complied with all contract document's General Provisions requirements, that they have indicated in writing, prior to bidding, all questions or concerns requiring clarification and/or explanation and have documented any and all specific exclusions involving work that would generally be considered to be work of their trade. The prime bidder shall coordinate all work so that anything excluded by the bidder of all or any portions of this section or division, have been addressed prior to bids in one of the following manners:

1. The work has been confirmed, by the prime bidder, to be work of another trade or subcontractor whose proposal is also being accepted.
2. Clarification of the matter has been made through the prime design professional via written addendum and is clearly and mutually understood by the prime bidder and the party raising the issue/question, or seeking clarification.
3. The work has been accepted as the responsibility of the prime contractor directly.

1.3 MATERIAL AND EQUIPMENT

A. The term "provide" when used in the Contract Documents includes all items necessary for the proper execution and completion of the work.

B. Specific reference in the Specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalog number, shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; and the Contractor, in such cases, may at his option use any article, device, product, material, fixture, form or type of construction which in the judgement of the Architect expressed in writing is equivalent to that specified.

C. Coordinate and properly relate all work of this Division to building structure and work of all other trades.

D. Visit premises and become thoroughly familiar with existing conditions; verify all dimensions in field. Advise Architect of any discrepancies prior to Bid Date in accordance with contract document's General Provisions.

E. Do not rough-in for any item or equipment furnished by others or noted "Not in Contract" (NIC), without first receiving rough-in information or determining rough-in requirements from other trades and/or Architect.

F. Provide storage and protection for all equipment and materials in accordance with requirements of contract document's General Provisions. Replace any equipment and materials damaged by improper handling, storage, or protection, at no additional cost to the Owner.

G. Keep premises clean in accordance with requirements of contract document's General Provisions.

1.4 SUBSTITUTIONS

A. Substitutions are allowed under La. R.S. 38:2291 and La R.S. 38:2292. Any requests for prior approval (as provided for under La. R.S. 38:2295) including any re-submitted data, shall be received by the Architect/Engineer a minimum of ten (10) working days prior to bid date. Submittals sent via facsimile and/or electronic mail will not be accepted. The Contractor shall recognize that it may be necessary to submit certain requests for prior approval sooner than the final date listed in the Instructions to Bidders, depending upon the complexity and completeness of the submittal. If, in the opinion of the Architect/Engineer, there is neither sufficient time available nor adequate descriptive data attached to the submittal, the submittal will not be considered. Except as otherwise specified, materials and equipment shall be new and bear the approval label of the Underwriters Laboratories, Inc. for the type of installation required.

B. Basis of design of systems is based on specific equipment for performance, size, shape, color, construction material, etc... If the use of other manufacturer's equipment, even though approved by Architect, involves additional cost due to space requirements, foundation requirements, increased mechanical or electrical services, the cost of such extra work shall be borne by the contractor. Even though a manufacturer's name appears in the Contract Documents as having acceptable equipment, his equipment shall be classified as being a substitute to the equipment originally designed for and named in the Contract Documents. Substitute equipment, materials, etc., will not be allowed to deviate from basis of design requirements.

C. All requests for prior approval shall identify where proposed material matches or exceeds the performance of the equipment specified. In addition, such submittal shall also clearly identify all deficiencies compared to specified product. Submittal of general cut sheets will be returned rejected.

D. The following items shall be submitted for prior approval:

1. Electrical Gear (Panelboards, Safety Switches, Circuit Breakers). This includes Short-Circuit Study and Arc-Flash Study.
2. Receptacles
3. Cover Plates
4. Pull Boxes
5. Wire
6. Transient Voltage Surge Suppressors (TVSS)/Surge Protective Devices (SPDs)

1.5 DRAWINGS AND SPECIFICATIONS

A. The specific intent of these Contract Documents is to provide the various systems, equipment, etc. to the Owner complete and in a thoroughly calibrated and functional condition.

B. The Drawings shall not be construed as shop drawings. In the event of a possible interference with piping or equipment of another trade, items requiring set grade and elevations shall have precedence over other items. Should any major interference develop, immediately notify the Architect.

C. In laying out Work, refer to mechanical, electrical, structural, and architectural drawings at all times in order to avoid interference and undue delays in the progress of the Work.

1.6 CODES AND REGULATIONS

A. Work shall be in full accord with the LA Sanitary Code, 2020 N.E.C. (NFPA 70), local ordinances, building codes, and other applicable national, state, and local regulations.

B. Equipment shall conform to requirements and recommendations of the National Bureau of Fire Underwriters and National Fire Protection Association (NFPA).

C. Items provided under this Division shall comply with the American National Standards Institute (ANSI) "Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People," ANSI A 117.1, and the Americans with Disabilities Act (A.D.A.).

D. Work called for in these Plans and Specifications shall be executed by competent workmen.

E. In the possible event of conflict between codes or regulations and Contract Documents, notify the Architect/Engineer immediately.

F. The drawings show approximate locations only of feeders, branch circuits, outlets, etc., except where specific routing or dimensions are indicated. The Architect reserves the right to make reasonable changes in locations indicated, before roughing-in, without additional cost to the Owner.

G. Because of the small scale of the drawings, it is not possible to indicate all of the offsets, fittings, and accessories required. The Contractor shall investigate the structural and finish conditions affecting his work and shall arrange such work accordingly, fittings, bends, junction boxes, pull boxes, access panels, and accessories required to meet such conditions at no additional costs to the Owner.

1.7 FEES, PERMITS, AND TAXES

A. Obtain and pay for permits required for the Work of this Division. Pay fees in connection therewith, including necessary inspection fees.

B. Pay any and all taxes levied for Work of this Division, including municipal and/or state sales tax where applicable.

1.8 MANUFACTURER'S DIRECTIONS

A. Install and operate equipment and material in strict accord with manufacturer's installation and operating instructions. The manufacturer's instructions shall become part of the Contract Documents and shall supplement Drawings and Specifications.

1.9 SUBMITTAL DATA

A. Submit shop drawings, project data, and samples in accordance with requirements of the General Provisions of the contract documents. Submittals shall be received no later than thirty (30) consecutive calendar days from effective date of "Notice to Proceed".

B. Shop drawings shall consist of published ratings or capacity data, detailed construction drawings for fabricated items, wiring and control diagrams, performance curves, installation instructions, manufacturer's installation drawings, and other pertinent data. Submit drawings showing revisions to equipment layouts due to use of alternate or substitute equipment.

C. Where manufacturers and suppliers of equipment, materials, etc. are unable to fully comply with Contract Document basis of design requirements, specifically call such deviations to attention of Architect/Engineer on submittals. Typed deviations on a separate sheet; underlined statements or notations on standard brochures, equipment fly sheets, etc. will not be accepted. Submittals shall clearly indicate where material submitted meets and/or exceeds the performance criteria of the equipment used as the basis of design of the project. Failure to note compliance with the basis of design material/equipment shall result in rejection of submittals.

D. Approval of submittals shall not relieve Contractor from furnishing required quantities and verifying dimensions. In addition, approval shall not waive original intent of Contract Documents.

E. Failure to obtain written approval of equipment shall be considered sufficient grounds for rejection of said equipment regardless of the stage of completion of the project.

F. Contractor shall submit Submittals/Shop Drawings on all equipment listed below. In addition, contractor shall refer to subsequent sections of the Electrical portion of the specifications for additional shop drawing submittal requirements.

1. Electrical Gear (Panelboards, Safety Switches, Circuit Breakers). This includes Short-Circuit Study and Arc-Flash Study.
2. Receptacles
3. Cover Plates
4. Pull Boxes

5. Wire
6. Transient Voltage Surge Suppressors (TVSS)/Surge Protective Devices (SPDs)

G. Shop drawings may be submitted electronically as described below.

1. Must be in a portable document format (PDF).
2. Must be submitted to the prime designer and the prime designer will forward to ADG Engineering for distribution/processing.
3. Do not submit directly to ADG Engineering's project manager.

H. Shop Drawings/submittals shall be submitted as grouped together and stated below and shall be submitted simultaneously. Prior to submission of electrical gear shop drawings, contractor shall obtain a copy of the approved mechanical and plumbing submittals. Any modifications required to be made to the electrical gear due to changes in electrical requirements (increases and/or decreases) of the mechanical and plumbing equipment shall be clearly notated in the electrical gear submittals.

1. Electrical Gear
2. Receptacles, Pull Boxes, and Wire
3. Transient Voltage Surge Suppressors (TVSS)/Surge Protective Devices (SPDs)

1.10 PROJECT COORDINATION

A. Refer to applicable Electrical Specification Sections for products work of this Division.

B. Refer to all plumbing, mechanical and fire protections specifications sections for related products affecting work of these electrical sections.

C. Coordinate handling of all products, materials, etc., through the Contractor. Coordinate space, access, clearances, etc., through the Contractor prior to preparation of shop drawing submittal.

1.11 SERVICE CONTINUITY

A. At all times during the construction of the project, electric service shall be maintained to all portions of the site and existing facility, except with prior written approval from the Architect/Engineer of interruptions. It shall be the responsibility of the contractor to provide, install and maintain (fuel included) any required rental generators to accomplish said task. Any required interruptions of electric service due to work being performed under this Contract shall be scheduled in writing a minimum of forty-eight (48) hours in advance after consultation with the Architect/Engineer and the Owner, and shall occur when permitted by the Architect/Engineer. The Contractor shall be responsible for any overtime pay required to meet these requirements, at no additional cost to the Owner.

1.12 VALUE ENGINEERING (V/E):

A. While it may be in the Owner's interest to consider the first cost money saving that may be generated via alternatives and options generated via participation in Value Engineering, contractor shall realize that substantive offers of Value Engineering (V/E), if accepted by the Owner, constitute a design-build agreement (offer and acceptance) with the owner, and drastically change the design concept of the project, as developed by the Professional of Record identified on the Contract Documents.

B. Should contractor offer, and the owner accept value engineering options that alter aspects of the system design, equipment, performance and/or performance verification or monitoring of respective systems, the contractor shall provide duly licensed professional engineering consultants working on behalf of the contractor (including sub-contractors and equipment vendors/manufacturers) to review, approve and take professional responsibility for performance and suitability of V/E hybrid systems, materials or operational changes related to respective V/E items. The contractor's licensed professional engineering consultants and the contractor assume any and all responsibility for the design and suitability in terms of performance, of hybrid systems installed, as contractor's Professional of Record, absolving the original project Professional of Record (identified on the original Contract Documents, released for the original project Bid/Negotiation) from responsibility for the V/E hybrid systems portion of the work.

C. The contractor, via the offer and acceptance of value engineering items on the project agrees to provide professional engineering design services and take full and complete responsibility for the hybrid design. Further, the contractor's (V/E Items) professional of record (either employees, or independent consultants to the contractor) through the offer and acceptance of V/E items, agree to indemnify and hold harmless the project owner, the owner's original A/E team (Professional of Record on behalf of the owner for the original Contract Documents) their heirs and assigns in regard to the V/E changes and their impact on the systems altered, affected or modified, in whole or in part. The Professional of Record shown on the original Contract Documents in regard to the systems altered, adjusted, revised, modified or otherwise affected by the value engineering items implemented, shall be absolved of design responsibility as a result of implementation of V/E items, and their original use of Engineering Seals used for original Contract Documents, shall not apply.

D. Contractor shall refer to subsequent specification sections for additional requirements for submission and approval of VE items.

1.13 PROJECT RECORD DOCUMENTS

A. Keep Project Record Documents in accordance with general provision requirements of the specifications.

B. During construction period, keep accurate records of installations paying particular attention to major interior and exterior underground and concealed piping, ductwork, etc.

C. The Contractor shall obtain a minimum of one (1) set of the contract documents including all addenda and change orders (including CAD/Revit files) as prepared by the Architect/Engineer.

D. If the Contractor elects to vary from the Contract Documents and secures prior approval from the Architect/Engineer for any phase of the work, he shall record in a neat and readable manner all such variances on the contract documents in red ink. Prior to requesting substantial completion, the marked-up set of contract documents shall be returned to the Architect/Engineer for approval.

E. All deviations from sizes, locations and from all other features of the installation shown in the Contract Documents shall be recorded.

F. In addition, it shall be possible using these drawings to correctly and easily locate, identify and establish sizes of all piping, directions, and the like, as well as other features of work which will be concealed underground and/or in the finished building.

G. Locations of underground work shall be established by dimensions to columns, lines or walls, locating all turns, etc. and by properly referenced centerline or invert elevations and rates of fall.

H. For work concealed in the building, sufficient information shall be given so it can be located with reasonable accuracy and ease. In some cases, this may be by dimension. In others, it may be sufficient to illustrate the work on the drawings in relation to the spaces in the building near which it was actually installed. The decision of the Architect/Engineer in this matter will be final.

I. The following requirements apply to all Record Drawings:

1. They shall be maintained at the Contractor's expense.
2. All such drawings shall be done carefully and neatly.
3. Additional drawings shall be obtained at the Contractor's expense.
4. They shall be kept up-to-date during the entire course of the work and shall be available upon request for examination by the Architect/ Engineer and when necessary, by other trades, to establish clearances for other parts of the work.
5. Record Drawings shall be returned to the Architect/Engineer upon completion of the work and are subject to approval of the Architect/ Engineer.
6. CAD files can be provided upon request (proper release forms must be completed). Contractor shall update CAD files to reflect As-Built conditions and shall submit revised file back to Architect/Engineer as part of the close-out documents.

1.14 OPERATION AND MAINTENANCE DATA

A. Refer to the specification Sections related to PROJECT CLOSEOUT or OPERATION AND MAINTENANCE DATA for procedures and requirements for preparation and submittal of maintenance manuals.

B. Provide the Owner with three (3) copies of printed instructions indicating various pieces of equipment by name and model number, complete with parts lists, maintenance and repair instructions and test and balance report.

C. COPIES OF SHOP DRAWINGS WILL NOT BE ACCEPTABLE AS OPERATION AND MAINTENANCE INSTRUCTIONS.

D. This information shall be bound in plastic hardbound notebooks with the job name, Architect and Engineer names permanently embossed on the cover. Rigid board dividers with labeled tabs shall be provided for different pieces of equipment. Submit manuals to the Architect for approval.

E. In addition to the operation and maintenance brochure, the Contractor shall provide a separate brochure which shall include registered warranty certificates on all equipment, especially any pieces of equipment which carry warranties exceeding one (1) year.

F. As part of the O & M binders, contractor shall include copies of all studies and test reports performed as part of this project, including but not limited to, the following:

1. Acceptance Testing Reports
    a. Grounding Tests
    b. Thermographic Tests
    c. Torque Values
    d. Rotation Tests
2. Short Circuit Study Report – Updated to Reflect Installed Conditions
3. Coordination Study Report – Updated to Reflect Installed Conditions
4. Arc Flash Study Report – Updated to Reflect Installed Conditions
5. All specified photos of installations including open trenches, grounding terminations, etc…

G. The operation and maintenance brochure shall be furnished with a detailed list of all equipment furnished to the project, including the serial number and all pertinent nameplate data such as voltage, amperage draw, recommended fuse size, rpm, etc. The Contractor shall include this data on each piece of equipment furnished under this contract including but not limited to those items listed below.

1. Electrical Gear (Panelboards, Safety Switches, Circuit Breakers). This includes Short-Circuit Study and Arc-Flash Study.
2. Receptacles
3. Cover Plates
4. Pull Boxes
5. Wire
6. Transient Voltage Surge Suppressors (TVSS)/Surge Protective Devices (SPDs)

1.15 EXCAVATING AND BACKFILLING

A. Provide excavating and backfilling necessary for Work of this Division. Comply with provisions of specification section pertaining to Site Work, if applicable.

B. Trenches shall be inspected by Code Authorities and/or Owner's Representative before and after piping is laid. Give Owner's Representative 24-hour notice for each inspection. If any trenches are filled without Owner's Representative and/or authority having jurisdiction inspection and as subsequently found to be deficient, the trenches shall be uncovered, inspected, and then re-filled, if requested by Owner's Representative. Prior to covering any and all underground facilities, including but not limited to conduit, ground rods, terminations, etc., Contractor shall take clear and concise digital photos and shall forward said photos to Engineer prior to covering said utilities.

C. Provide minimum 24 inches of cover to finish grades or paving at raceways.

D. Protect and maintain trenches in dry condition until piping has been inspected and approved. Immediately after approval, backfill trenches in tamped layers. Repeat backfill and tamping 6 months after initial coverage has been accomplished to avoid swale development from sinking soils.

E. Compact fill to satisfaction of Architect and/or Owner's Representative.

F. Prior to any excavating, Contractor shall be responsible for having all utilities in the area of excavation located and marked by an approved company with a minimum of five (5) years' experience locating underground facilities. This includes all owner owned utilities on their site.

G. Approximate locations shown on the drawings shall not be used. Any facility damaged by the Contractor's underground work shall be repaired and/or replaced at no additional cost to the Owner.

1.16 CUTTING AND PATCHING

A. Comply with requirements of the Specifications regarding cutting and patching. Locate and timely install sleeves as required to minimize cutting and patching.

B. Repairing Roadways and Walks: Where this contractor cuts or breaks roadways or walks to lay the piping, he shall repair or replace these sections to match existing, unless specifically identified as the responsibility of others.

1.17 PAINTING

A. Painting shall be provided under the Specification section regarding painting, unless specified otherwise. Leave exposed piping, materials, and equipment clean and free of rust, grease, dirt, etc. before and after painting.

B. Factory finished equipment and materials which are marred, chipped, scratched, or otherwise unacceptable shall be repaired or replaced under this Division to Architect satisfaction, at no additional cost to Owner.

C. Coordinate all painting requirements with prime bidder prior to bids.

1.18 EXISTING CONDITIONS

A. The Electrical Contractor shall visit the building site to determine existing conditions and will be held responsible for allowing for these conditions in his bid.

B. Note that this area of work will have storm drainage, mechanical and electrical utilities located underground and within and under the buildings. It is part of this work for the Contractor to determine the scope and location of all utilities to be installed with this project and arrange his work around others. There will be no extra consideration for work discovered as being hidden after the bid, and no change orders for extra cost that may be caused by unknown after bid conditions. The drawings show approximate locations only of feeders, branch circuits, outlets, etc., except where specific routing or dimensions are indicated. The Architect reserves the right to make reasonable changes in locations indicated, before roughing-in, without additional cost to the Owner.

1.19 PROTECTION OF APPARATUS

A. The Contractor shall take precautions necessary at all times to properly protect his apparatus from damage. Failure on the part of the Contractor to comply with the above to the Architect's satisfaction shall be sufficient cause for the rejection of the particular piece of apparatus in question.

1.20 MINOR DEVIATIONS

A. The Contractor shall realize that the drawings cannot delve into every step, sequence, or operation necessary for the completion of the project without drawing on the Contractor's experience. Only typical details are shown on the plans. In cases where the Contractor is not certain about the method of installation of his work, he shall ask for details. Lack of details will not be an excuse for improper installation.

1.21 SALVAGED MATERIALS

A. The Owner shall have priority for the selection of salvaged material and equipment. Any equipment, light fixtures, devices, ballasts, materials, etc. selected to remain property of the Owner shall be removed and delivered to a location on the site as designated by the Owner. Material and equipment not retained by the Owner shall become the property of this Contractor and shall be removed from the site by him.

B. The Contractor shall obtain written approval of all material and equipment determined not to be salvaged by the Owner.

1.22 SAFETY PRECAUTIONS

A. Work methods and project safety are the Contractor's sole responsibility.

B. Contractor shall furnish and place proper guards for prevention of accidents. He should provide and maintain any other necessary construction required to secure safety of life or property, including maintenance of sufficient lights during all day and night hours as required to secure such protection.

C. Temporary electrical services during construction should be maintained in perfect condition. Frayed, lose or opened connections should not be used for temporary services. The Contractor should use only equipment in first class working condition for construction services.

1.23 TEMPORARY CONSTRUCTION LIGHTING

A. The Contractor should provide and install construction lighting as required by General Contractor and other trades. The installation shall conform to requirements of the National Electrical Code.

1.24 SUPERVISION

A. Contractor shall personally, or through an authorized and competent representative, constantly supervise the work done from beginning to completion and final acceptance. To the best of his ability, he shall keep the same foreman and workmen throughout the project duration. Foreman shall be present at project site at all times while work under this section of the contract documents is being performed. Foreman shall be accessible by cellular phone at all times. Respective telephone numbers shall be forwarded to Architect/Engineer prior to commencement of work on this project.

1.25 CAD FILES

A. ADG will provide, upon request, CAD files to the contractors for use in preparing submittals and record drawings. Plans will be provided at a cost of $10.00 per drawings sheet requested. By submitting request for CAD files, contractors automatically consent to the verbiage contained in the CAD release form contained in the plans. This includes any all limitations, restrictions, indemnifications, etc… contained therein.

PART 2 - PRODUCTS

2.1 EQUIPMENT LABELS

A. Panelboards, safety switches, equipment cabinets, motor starters and other equipment shown on the drawings and furnished and/or installed under this section of the Specifications shall be labeled with laminated plastic nameplates inscribed to identify equipment with description shown on the drawings for panels, the name of the equipment controlled for motor starters or the system or function involved for other equipment. Provide typewritten panelboard directories indicating the equipment served and its location using final approved room numbers, etc., as directed by the Architect. Refer to specification section – Electrical Distribution System and details(s) for additional requirements.

PART 3 - EXECUTION

3.1 COORDINATION OF TRADES

A. Where work is in close proximity to the work of other contractors, the Contractor shall review plans of other contractors and coordinate his work with theirs. The Electrical Contractor shall verify the location of lighting fixtures, beams, structural members, conduit, ductwork, pipes or other obstructions before beginning his work in the area. Notify the Architect where proper clearances do not occur or where the work of others would interfere with the safe and/or proper operation of this work.

3.2 HARMONIC DISTORTION

A. IEEE 519-1992 - Harmonic Control in Electrical Power Systems shall be a requirement of this project. Harmonic filters (passive or active), phase multiplication devices, or any other components required to mitigate harmonic voltage THD to 5% and current THD to 8% maximum levels shall be an integral part of the VFD system. Compliance measurement shall be based on THD added (during VFD full load operation compared to across-the-line operation) at the VFD circuit breaker terminals or actual THD measurement at the VFD circuit breaker terminals during full load VFD operation. Designs which employ shunt tuned filters must be designed to prevent the importation of outside harmonics which could cause system resonance or filter failure. Calculations supporting the design, including a system harmonic flow analysis, must be provided as part of the submittal process for shunt tuned filters. Any filter designs which cause voltage rise at the VFD terminals must include documentation in compliance with the total system voltage variation of plus or minus 10%. Documentation of Power Quality compliance shall be part of the commissioning required by the VFD supplier. Actual job site measurement testing shall be conducted at full load and documented in the operation and maintenance manuals. Harmonic measuring equipment utilized for certification shall carry a current NiTS calibration certificate. The final test report shall be reviewed, and compliance certification stamped by a licensed professional engineer (PE).

3.3 SUPPORTS AND FOUNDATIONS

A. Support all items covered by this Specification directly from building structural members independent of any ceilings or any other installed item. Panelboards and switches may be attached to suitably reinforced walls. Ground or slab mounted equipment shall be mounted on a separate four-inch-high concrete slab. Extending 6" beyond equipment footprint on all sides.

B. Do not attach items of this Specification to HVAC ductwork, ceiling grids and ceiling support members, piping or other equipment unless specifically shown otherwise. Where applicable, all equipment including conduit shall be supported from overhead wall, floor or roof structures using galvanized channel or angle members for a rigid support. Position supports and equipment such that access through lay-in ceilings or panels is not impaired and all Code required clearances are maintained.

C. Where applicable, under no circumstances is the Contractor to attach to or support from any bar joist bridging. Any supports to the bar joists or any structural systems shall be approved by the Architect. All supplemental angle or channel iron required to support equipment of this Specification shall be furnished by the Electrical Contractor.

3.4 EQUIPMENT LAYOUT

A. The physical location and arrangements of electrical equipment is shown on the Plans and is to be used by the Contractor as a guideline in construction. It is the responsibility of the Contractor to review the Plans with the proposed equipment and equipment of other contractors that are affected, and to ensure that all Code required clearances, wiring distances and maintenance accesses, including equipment heights, of all items are maintained. Alternate arrangements to accomplish the above due to field conditions or changes in physical size of the equipment proposed for the project are to be submitted to the Architect for review before any work is begun or equipment ordered.

B. All electrical gear arrangements shall be presented in a 1/4-inch scaled drawing showing all equipment, including those of other contractors. This includes all electrical rooms, mechanical rooms, mechanical yards, electrical yards, service platforms, boiler rooms, etc… Include shop drawing cut sheets and applicable information. Indicate on the drawing by dimension all required Code clearances, wiring distances and maintenance access requirements. Where equipment heights are required to be coordinated with architectural or other items, indicate revised heights. Refer to "MOUNTING HEIGHTS."

3.5 GUARANTEE

A. The Contractor shall guarantee all materials, equipment and workmanship for a period of one (1) year from the date of final acceptance of the project. This guarantee shall include furnishing of all labor and material necessary to make any repairs, adjustments or replacement of any equipment, parts, etc. necessary to restore the project to first class condition. This guarantee shall include the replacement of lamps. Warranties exceeding one (1) year are hereinafter specified with individual pieces of equipment.

B. If the Contractor’s office is in excess of a fifty (50) mile radius of the project, he shall appoint a local qualified contractor to perform any emergency repairs or adjustments required during the guarantee period. The name of the contractor appointed to provide emergency services shall be submitted to the Architect/Engineer for approval.

3.6 CLEANING

A. Refer to the Specification Section relating to PROJECT CLOSEOUT or FINAL CLEANING for general requirements for final cleaning.

END OF SECTION 26 00 01

SECTION 26 05 00 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions; as appropriate, apply to the work specified in this section.

B. Refer to all portions of the Contract Documents as well as the plans and specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding electrical work.

PART 2 - PRODUCTS

2.1 WIRE (600 VOLT AND BELOW)

A. All conductors used in the work shall be soft drawn annealed copper having a composition of not less than 98% of pure copper. Conductors shall be standard code gauge in size, insulated, and shall have insulation rated for use at 600 volts. The contractor's bid shall reflect the use of all copper conductors unless specifically indicated otherwise. When aluminum conductors are used as part of the V.E. process, their use shall be limited to circuits, feeders and services rated 150 Amperes and larger and shall be of the high alloy, compact stranded type, Southwire SIM pull THHN, SIM pull THWN or equivalent. It shall be the contractor's responsibility for properly upsizing the conductors and associated conduit to achieve the equivalent ampere rating of the circuit/feeder/service as specified for copper conductors. As part of this VE item, Contractor shall provide an updated riser diagram (one-line diagram) indicating proposed conductor changes.

B. Unless otherwise noted or specified, insulation shall be Type THWN. Wires shall be of the single conductor type and shall be stranded. Wire insulation shall not contain any asbestos materials.

C. Throughout the system, conductors shall be identified as to phase and voltage of system by color-coding. Color-coding shall be continuous the full length of wire for all wire sizes. Identification by permanent paint bands or tags at outlets will not be acceptable. Surface printing at regular intervals on all conductors shall indicate manufacturer, size, voltage, and insulation type. White and/or gray colored insulation shall be used for grounded conductors and only for grounded conductors.

D. The color code assigned to each phase wire shall be consistently followed throughout the project. The following systems of color-coding shall be strictly adhered to:

1. 208/120 Volt, 3-Phase, 4-wire Wye Systems
   a. Grounding leads = green
   b. Grounded neutral leads = white
   c. Ungrounded phase wires = black, red and blue

E. Where multiple neutral conductors are installed in a common raceway, the neutral conductor for each circuit shall be separately identified in accordance with the National Electric Code (NEC).

2.2 CONDUIT

A. Unless otherwise specified or shown on the drawings, all conduit shall be rigid galvanized steel (RGS), or rigid nonmetallic conduit (PVC) as allowed in the paragraphs below.

B. RGS may be used for conduit shown run underground (red concrete encasement required), may be used in concrete slabs, and shall be used for conduit run exposed to the weather (locations defined as damp locations and wet locations in Article 100 of the NEC) and shall be run in hazardous areas.

C. PVC may be used for conduit run in concrete slabs or may be run underground (underground only where permitted by NEC and local ordinances). Concrete encasement will not be required on underground runs unless specifically noted or specified elsewhere. PVC shall not be run exposed nor concealed in walls nor above ceilings nor in hazardous areas. When rigid nonmetallic conduit (PVC) is installed underground, it shall be Schedule 80 at all underground road crossings, at all underground driveway crossings, and when required by the NEC or local ordinance or specified otherwise. PVC Schedule 40 may be used at all other underground locations. The only use of exposed above ground PVC conduit shall be for telephone service entrance use up utility poles (Schedule 80 required), for CATV service entrance use up utility pole (Schedule 80 required) or for power utility service entrance use up utility pole (Schedule 80 required).

D. Where PVC is utilized for underground installations, RGS 90^{o} elbows and conduit shall be utilized to turn conduit vertical and to rise up to above grade/slab. Red concrete encasement shall be required for all elbows and vertical conduits. Refer to detail on plans.

E. All conduit shall be new and shall bear the inspection label of the Underwriters Laboratories, Inc. (U.L.).

F. Where multiple conduits are installed underground in the same trench, carlon snap-n-stac spacers, or approved equivalent, shall be utilized and spaced a maximum of 5'-0" apart. Provide pre-cast, 4" thick, concrete bases at each spacer and where conduits are turned to be installed in a vertical orientation. Provide spacers immediately before and after all elbows and where conduit transitions from underground to above ground.

G. Fittings for rigid steel conduit shall be hot-dipped galvanized and shall be of an approved type specially designed and manufactured for their purpose.

H. All flexible conduit, where installed indoors and outdoors, shall be of the flexible liquid tight metallic type. Flexible weatherproof electrical conduit is prohibited from use on this project.

I. Metallic conduit shall be metallized, sheradized, or hot-dipped galvanized.

2.3 EXPANSION FITTINGS

A. Each conduit that is buried in or rigidly secured to the building construction on opposite sides of a building expansion joint and each long run of exposed conduit that may be subject to excessive stresses shall be provided with an expansion fitting. Expansion fittings shall be made of hot-dipped galvanized malleable iron and shall have a factory-installed packing, which will prevent the entrance of water, a pressure ring, and a grounding ring.

B. In addition to the grounding ring, a separate grounding conductor shall be provided. This grounding conductor shall be an external flexible copper ground securely bonded by approved grounding straps on each end of the fitting. Grounding conductor may be omitted when expansion fitting includes an approved integral grounding conductor or device.

C. Where conduits are buried in concrete, they shall cross the building expansion joints at right angles. Ends of conduit shall be provided with insulated bushings.

2.4 OUTLET BOXES

A. Outlet boxes for adjacent rooms shall not be installed in the same stud space to minimize sound transmission.

2.5 PULL BOXES

A. Furnish and install pull boxes. Boxes shall be code gauge galvanized steel with screw attached access panels unless noted otherwise in top, side or bottom as required.

2.6 WIRING DEVICES

A. Wiring devices shall be as listed in the following table, except that color of device shall match color of outlet cover plate. The "*" in the model numbers indicate color selection to be made.

1. 20A 125V 2P 3W Duplex (G5362-WT*/ GFTWRST20*)
GFCI Receptacles (Outdoor)

2.7 WEATHERPROOF RECEPTACLES

A. Weatherproof receptacles shall be duplex receptacles of the ground fault current interrupting type as specified under WIRING DEVICES, mounted in a cast iron or cast aluminum Type FD (or approved equivalent) conduit fitting with Leviton No. 5997-DGY, (or approved equivalent) clear, extra deep GFCI Style weather resistant cover. Weatherproof receptacles shall be flush mounted in exterior walls whenever possible.

PART 3 - EXECUTION

3.1 MOUNTING HEIGHTS

A. Unless otherwise noted on the drawings or required by the Architect/Engineer, the mounting heights set forth below shall apply. Dimensions given are from finished floor to the top of the device unless noted otherwise noted.

1. Panelboards 6'-7" to top of can

B. Where overcurrent or safety switch devices are shown to serve exterior equipment, the Contractor shall review in detail with the Architect/Engineer proposed exterior mounting locations, mounting heights, conduit routing, etc., and receive approval prior to rough-in.

3.2 WIRE (600 VOLT AND BELOW)

A. Service entrance, feeders, and motor circuit conductors shall be run their entire length without joints or splices. Splices and joints in branch circuit wiring shall be only at outlets or in accessible junction boxes.

B. Joints and splices in branch circuit wiring shall be made with compression type solderless connectors. Connectors of the nonmetallic screw on type are not acceptable.

C. Terminations or splices for conductors # 6 AWG and larger shall utilize Burndy Unitap, Polaris Black or equivalent connectors.

D. Unless otherwise specified, all wiring shall be installed in conduit.

E. No wire shall be smaller than No. 12 for power or lighting service, fixture whips or for switch legs. Wire for each branch circuit shall be of a single size and type from the branch circuit protective device to the last outlet on the circuit unless noted otherwise.

F. Not more than three (3) branch circuits shall be installed in a raceway for three-phase electrical systems. For single phase electrical systems, the number of circuits in any one raceway shall be limited to two (2).

G. Branch circuit home run numbers shown on the drawings shall be used for connection of circuit wiring to similarly numbered protective devices in branch circuit panelboards.

H. Where the length of a home run, from panel to the first outlet exceeds 75 feet (75') for 120-volt circuits, the conductor size shall be No. 10 AWG or that shown on the drawings, whichever is larger.

I. For all 3-phase circuits, contractor shall provide and install a full-size neutral conductor and a grounding conductor for a complete 5-wire circuit. If the neutral

conductor is not required by the equipment, contractor shall install wire nuts on each end of the neutral conductor for future use.

3.3 CONDUIT

A. When conduits are shown to be installed in the floor slab, under the floor slab, or underground, whenever possible and approved by the Architect/Engineer, conduits one-inch (1") trade size and smaller shall be installed in the concrete floor slab. Conduits embedded in concrete slabs shall have lateral spacing not less than three diameters except where the slab has been specially designed to accommodate closer spacing.

B. Conduits larger than one-inch (1") trade size shall not be installed in the floor slab and shall be installed a minimum of twelve inches (12") below the floor slab.

C. Conduits shown underground but not in or under a floor slab shall be installed not less than twenty-four inches (24") below grade. Conduit locations shall be identified by means of 4" wide; detectable, red warning/ marker tape installed in trench in accordance with NEC requirements.

D. Prior to backfilling of trenches and /or providing concrete encasement, contractor shall take photographs of conduit installation including spacers/supports and concrete support blocks. In addition, prior to backfilling trenches and after concrete encasement, take additional photographs of installation. Submit photographs to engineer upon request.

E. Rigid conduit joints shall be made with threaded fittings made up tight with at least five threads fully engaged. Compression type threadless fittings and setscrew type fittings shall not be used for RGS unless specifically approved in writing by the Architect/Engineer.

F. Where conduits enter boxes or cabinets that do not have threaded hubs the conduit shall be secured in place with galvanized locknuts inside and outside and shall have bushings inside for interior locations. All exterior terminations shall be made with Meyers hubs or approved equivalent. Conduits larger than one inch (1") shall have galvanized insulating bushings.

G. All conduits shall be installed as indicated or scheduled on the drawings and shall be of sufficient size to accommodate the required number of insulated conductors including equipment-grounding conductor. A grounding conductor shall be pulled in every raceway and properly terminated. The Contractor shall increase the conduit size from that shown on the drawings where necessary to accommodate the equipment-grounding conductor and/or where to comply with the NEC.

H. Unless otherwise noted, conduit shall be run concealed. Conduit runs from wall mounted receptacles, toggle switches, etc. shall be run concealed in walls whenever possible.

I. Conduit runs shall be straight; elbows and bends shall be uniform, symmetrical, and free from dents or flattening. All conduit shall be installed with runs parallel or perpendicular to walls, ceilings and structural members.

J. Conduit shall be held securely in place by approved hangers and fasteners of appropriate design and dimensions for the particular application. Support shall be such that no strain will be transmitted to the outlet box and/or pull box supports.

K. All conduit runs shall be installed in accordance with all applicable sections of the National Electrical Code and local codes or ordinances.

L. Where empty conduits are shown, a #14 pull wire shall be installed and conduits shall be capped.

M. Terminations to all mechanical equipment shall be made using a minimum of 12" to a maximum of 24" liquid-tight flexible metallic conduit.

3.4 WIRING DEVICES

A. All wiring devices installed shall be identified as to which panel serves it and which overcurrent protection device protects the wiring device. This shall be accomplished via panel name and circuit number being written using a permanent marker on the back side of the coverplate.

3.5 MANUFACTURER'S DIRECTION

A. Contractor shall be responsible for coordinating all aspects of equipment electrical service installation for all electrical gear, devices, mechanical, and plumbing. Contractor shall obtain and review actual manufacturer's installation instructions and shall install electrical facilities to said equipment in accordance with the instructions, NEC, NFPA and contract documents. Should a discrepancy exist between the manufacturer's installation directions and the contract documents, the engineer shall be notified in writing immediately.

3.6 COORDINATION WITH OTHER TRADES

A. Prior to purchasing and installing any wire and/or conduit for all circuitry to mechanical equipment and other equipment requiring electrical power furnished by other trades as part of this project, contractor shall review equipment cut sheets and shall verify exact equipment electrical requirements. Any discrepancies between contract documents and equipment submittals shall be immediately brought to the architect/engineer's attention for clarification.

END OF SECTION 26 05 00

SECTION 26 05 26 - GROUNDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions) as appropriate, apply to the Work specified in this Section.

B. Refer to all Electrical portions of the specifications, as well as the Specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding electrical work.

1.2 GENERAL

A. Contractor shall provide grounding of service equipment, non-current carrying conductive surfaces of equipment, metallic raceways, fencing, and other equipment as specified herein and as shown on the drawings.

1.3 SCOPE

A. The equipment shall be grounded as shown on the plans and as specified herein. All metal structures and equipment, including fences, shall be connected to the systems ground grid. Ground conductors must be as short and straight as possible, protected from mechanical injury and, if practicable, without splice or joint.

B. Provide and install 1" C with insulated 3/0 C.U. service grounding conductor from grounding electrode(s) to telephone service backboard and to each and every tele/data/CATV closet.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Main grounding conductors shall be bare, soft drawn, stranded, single conductor copper wire, and generally sized as follows:

1. Ground grid cable: #3/0 AWG
2. Equipment and structures to grid conductor: #3/0 AWG
3. Fence grid conductor: #3/0 AWG
4. Fence-to-fence post conductor: #2 AWG (Stranded)
5. Fence post to grid conductor: #2 AWG (Stranded)

2.2 CONNECTORS

A. All connectors shall be of the exothermically welded type.

2.3 GROUND RODS

A. Ground electrodes shall be copper-clad steel rods nominal 3/4 inch in diameter and ten feet (10') long.

2.4 EXOTHERMIC WELD PROCESS

A. All wire-to-wire exothermic welds shall be the parallel type. Wire-to-wire rod connections shall be "T" type. To establish a basis of design for quality and type, the following is a partial list of approved Cadweld type connections. Approved equivalent connectors by other manufacturers may be utilized.

Connections	Cadweld Type
Parallel cable-to-cable	PG
Cable to ground rod	GR, FT, NT or NX
Cable to steel	VN
Cable to lug	LA
Cable to rebar	Consult factory (similar to RR)

PART 3 - EXECUTION

3.1 EXPOSED NON-CURRENT-CARRYING METAL PARTS

A. Ground connections to equipment or devices shall be made as close to the current-carrying parts as possible; that is, to the main frame rather than supporting structures, bases or shields. Grounding connections shall be made only to surfaces that are clean and dry. Steel surfaces shall be ground or filed to remove all scale, rust, grease and dirt. Copper and galvanized steel shall be cleaned to remove oxide before making welds or connections. Code size ground conductors shall be run in all conduits containing circuits protected by overcurrent devices; then properly terminated.

B. All raceways, conduits, and all exposed non-current carrying metal parts shall be grounded. Such items shall be bonded together and permanently grounded to the equipment ground bus. Conduits shall be connected by the grounding bushings or clamps to ground bus. Flexible "jumpers" shall be provided around all raceway expansion joints. Bonding straps for steel conduit shall be copper. Jumper connections shall be provided to effectively ground all sections of rigid conduit connected into plastic pipe. No metallic conduit shall be left ungrounded. In conduit systems interrupted by junction or switch boxes where locknuts and bushings are used to secure the conduit in the box, the sections of conduit and box must be bonded together using grounding bushings.

C. Any conduits entering low voltage (600 volts or below) equipment through sheet metal enclosure and effectively grounded to enclosure by hub need not be otherwise bonded. Both ends of ground buses in switchboards, etc., shall be separately connected to the main ground bus to form two (2) separate paths to ground.

3.2 EXOTHERMIC WELD PROCESS

A. The grounding grid shall be installed and connected as specified herein and as shown on the drawings using an exothermic weld process (Cadweld or other approved manufacturer). Where bolted connections are required, brass/bronze 2-hole pads exothermically welded to the grounding conductor shall be used.

B. All exothermic weld grounding connections shall be made using exothermic welded Cadweld (or other approved manufacturer) connections, tools and materials.

C. Unless noted otherwise, all copper-to-copper or copper-to-steel splices and terminating specified shall be made with exothermic welds.

D. Steel surfaces shall be ground or filed to remove the galvanizing coating and the surface cleaned and dried thoroughly prior to making the welds. All welds shall be repainted with an approved galvanized paint after the welds are made.

E. Copper surfaces shall be sanded to remove oxides and the surface cleaned and dried thoroughly prior to making the welds. All welds shall be painted with an approved anti-oxide manufactured by T&B or Burndy (or other approved manufacturer) to prevent corrosion.

F. Brass/bronze split bolts shall be used to connect the fence grounding conductors where shown on the drawings.

G. Where bolted connections are specified, brass/bronze 2-hole pads shall be utilized except for equipment manufactured neutral and ground busses. The equipment to be grounded shall be cleaned of all paint, dirt, and rust prior to making the bolted connection. All bolts, nuts, washers, and lock washers shall be stainless steel. All such connections shall be coated with an approved anti-oxide compound. Only one (1) 2-hole pad shall be terminated on one (1) set of bolts, nuts and washers.

H. Where approved in writing by the Engineer, brass/bronze pipe ground clamps or 2 set screw 2-hole pads may be used for special conditions.

I. Where grounding conductors or PVC conduits penetrate walls, floors, etc., these openings and conduits shall be sealed with Dow Corning No. 2001 Silicone RTV (or other prior approved manufacturer) after installation is complete.

J. Provide gradual bends for all grounding grid cables wherever possible. Sharp bends will not be permitted. The minimum being radius should be 8 inches.

K. The Contractor shall notify the Architect/Engineer when the buried grounding grid is completed for inspection by the Engineer prior to backfilling. Notification should be no less than 24 hours prior to scheduling the backfill of trenches.

L. The Contractor shall test the grounding grid resistance and continuity. The testing shall be performed after all underground and above ground connections have been made. Refer to “Acceptance Testing” specification section for additional requirements.

3.3 ELECTRICAL SERVICE ENTRANCE

A. Grounding conductor shall be installed from one (1) ground rod to the next and then looped back to the service equipment. Both ends of the grounding conductor loop shall be properly terminated on the service equipment's neutral bus. Provide all required lugs to accomplish this. Properly bond to ground bus per NEC requirements.

B. Ground rods shall be spaced a minimum of 6'0" from each other.

C. Extend grounding conductor to all metallic water piping, building steel, concrete reinforcing steel, all other building steel for adjacent buildings services from main electrical service and properly terminate. Refer to details for additional requirements.

D. Grounding conductor shall be installed using 1" schedule 80 PVC conduit.

E. Prior to pouring of slab(s) and prior to covering grounding grid, contractor shall take digital photographs of all ground rods, terminations, conductors and overall photo and shall submit to engineer prior to requesting substantial completion.

F. Provide and install hand-hole (inspection well) with bolt-down removable cover at all ground rods to allow visual inspection of the terminations of the grounding conductors to the grounding electrode(s). Refer to details for additional requirements.

END OF SECTION 26 05 26

SECTION 26 05 71 - ACCEPTANCE TESTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract apply to the Work specified in this Section.

B. Refer to all Electrical Sections of the Specifications, as well as the Specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding electrical work.

1.2 SUMMARY

A. This section outlines the acceptance testing requirements and division of responsibility.

1.3 SCOPE

A. Contractor may, at his option, self-perform acceptance testing as specified herein.

B. The testing firm shall provide all materials, equipment, labor and technical supervision to perform such test and inspections.

C. It is the intent of these tests to assure that all electrical equipment is operational and within industry and manufacturer's tolerances and is installed in accordance with design specifications.

D. The tests and inspections shall determine suitability for energization.

1.4 REFERENCES

A. All inspections and tests shall be in accordance with the latest editions following applicable codes and standards except as provided otherwise herein.

1. National Electrical Code – NEC
2. National Electrical Manufacturer's Association - NEMA.
3. American Society for Testing and Materials - ASTM
4. Institute of Electrical and Electronic Engineers – IEEE
5. National Electrical Testing Association – NETA
6. American National Standards Institute – ANSI
7. State Codes and Ordinances
8. Insulation Cable Engineers Association – ICEA
9. National Electrical Safety Code – NESC

B. All inspections and tests shall utilize the following references:

1. Project Design Specifications
2. Project Design Drawings
3. Manufacturer's Instruction Manuals applicable to each apparatus.

1.5 QUALIFICATIONS OF TESTING AGENCY

A. The testing/engineering firm shall be a corporately independent testing organization that can function as an unbiased testing authority, professionally independent of the manufacturers, suppliers and installers of equipment or systems evaluated by the testing firm.

B. The testing firm shall be regularly engaged in the testing of electrical equipment devices, installations and systems.

C. The testing firm shall have been engaged in such practices for a similar size project.

D. The testing firm shall utilize only full-time technicians who are regularly employed by the firm. Electrically unskilled employees are not permitted to perform testing or assistance of any kind. Electricians and/or linemen may assist, but may not perform testing and/or inspection services.

E. The testing firm shall submit the "on site" foreman's qualifications and experience through the Contractor at the pre-construction conference for review and approval by the Engineer.

F. Contractor shall submit statement of qualifications of proposed testing firm at the pre-construction conference for approval and acceptance by the Engineer.

1.6 DIVISION OF RESPONSIBILITY

A. Testing firm shall perform the following tests as outlined in these specifications:

1. Ground Resistance Tests
2. Thermographic Survey

B. Contractor shall perform the following tests as outlined in these specifications:

1. Low Voltage Cable
2. Phasing and Rotation Tests

1.7 TEST REPORT

A. The test report shall include the following:

1. Summary of project.
2. Description of project.
3. Description of test
4. Test results.
5. Conclusions and recommendations.
6. Appendix, including appropriate test forms.
7. Identification of test equipment used.
8. Signature of responsible test organization authority.

B. Furnish three printed (3) copies of the complete report to the Engineer prior to requesting substantial completion and no later than thirty (30) days after completion of testing procedures unless directed otherwise. After acceptance of the report, Contractor shall submit an electronic copy of the report in PDF format.

C. All tests shall be performed with apparatus de-energized except where otherwise specifically required.

D. The testing firm shall have a designated safety representative on the project to supervise operations with respect to safety.

E. The testing firm shall have a calibration program that assures that all applicable test instrumentation is maintained within rated accuracy. The accuracy shall be directly traceable to the National Bureau of Standards. Instruments shall be calibrated in accordance with the following frequency schedule:

F. Field Instruments: Analog - 6 months maximum
Digital - 12 months maximum

G. Laboratory Instruments: 12 months

H. Leased specialty equipment: 12 months

I. Dated calibration labels shall be visible on all test equipment.

J. Records must be kept up to date which show date and results of instruments calibrated or tested.

K. An up-to-date instrument calibration instruction and procedure will be maintained for each test instrument.

L. Calibrating standard shall be of higher accuracy than that of the instrument tested.

1.8 GENERAL

A. An outline of tests required is included in this section. Refer to applicable NETA, ANSI, NEMA, IEEE and other test standards for exact procedures, methods and requirements.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 TESTS

A. Upon completion of the work, the entire electrical system shall be tested and shall be shown to be in perfect working condition, in accordance with the intent of the specifications.

3.2 EQUIPMENT TESTS

A. Testing Agency shall perform thermographic study of all terminations in the new electrical system prior to acceptance. Thermographic study shall be performed after load is placed on the system.

B. All 600 volt and below cables shall be tested as specified after being installed but prior to being terminated.

C. Ground resistance tests shall be performed at the pad mounted transformer, at the Service Entrance and at each step-down/step-up transformer as specified.

D. All terminations (lugs, split-bolts, etc.) shall have their "tightness" torque values measured and verified against NEC and manufacturer's requirements.

3.3 GROUND RESISTANCE TESTS

A. Inspect ground system for compliance with plans and specifications.

B. Perform 3-point fall-of-potential test per IEEE Standard No. 81, Section 9.04 on the main grounding electrode or system.

C. The main ground electrode system resistance to ground shall be no greater than one (1) ohm at the pad mounted transformer at the Service Entrance and at all step-down/step-up transformers.

3.4 LOW VOLTAGE CABLE, 600 V MAXIMUM

A. Compare cable data with drawings and specifications. Inspect exposed sections of cables for physical damage and correct connection in accordance with one-line diagram.

B. Verify tightness of accessible bolted connection by calibrated torque wrench in accordance with manufacturer's published data. Perform thermographic survey.

C. Inspect compression-applied connectors for correct cable match and indentation.

D. Verify cable color-coding with applicable Engineer's specifications.

E. For all service entrances, switchboards, MCC and all panelboard feeders, perform insulation-resistance test on each conductor with respect to ground and adjacent conductors. Applied potential shall be 1000 volts dc for one minute.

F. Perform continuity test to insure correct cable connection.

G. Bolt-torque levels shall be in accordance with manufacturer's requirements. Measure and record results.

H. Minimum insulation-resistance values shall be not less than 50 mega-ohms.

I. Investigate and report on all deviations between adjacent phases.

3.5 PHASING AND ROTATION:

A. Perform phasing test on each circuit tie section energized by separate sources.

B. Perform tests from permanent source.

C. Damage caused due to omission of this test shall be corrected at Contractor's expense.

3.6 THERMOGRAPHIC SURVEY:

A. Thermographic survey shall be performed with equipment utilizing long wave technology that provides photo record of deficient areas.

B. Equipment to be inspected shall include all current-carrying devices installed under this contract, generally, all new high and low voltage cable terminations and splices. Specific equipment to be surveyed includes the following.

1. Medium Voltage Transformers
2. Medium Voltage Terminations
3. Medium Voltage Sectionalizers
4. Medium Voltage Load Interrupters
5. Switchboards
6. Panelboards
7. Paralleling Gear
8. TVSS Units
9. UPS Units (rotary and/or battery based)
10. Loadcenters
11. Transfer Switches
12. Safety Switches (fused and non-fused)
13. Motor Controllers
    a. Starters
    b. Variable Frequency Drives
14. Chillers
15. Pumps
16. Generators and it's terminations

C. Inspect physical, electrical and mechanical condition. Remove all necessary covers prior to thermographic inspection.

D. Provide report including the following:

1. Discrepancies.
2. Temperature difference between the area of concern and the reference area.
3. Cause of temperature difference.
4. Areas inspected. Identify inaccessible and/or unobservable areas and/or equipment.

5. Identify load conditions at time of inspection.
6. Provide photographic thermograms of all equipment (non-deficient and deficient areas). Provide corresponding digital photograph (non-thermal image) of electrical equipment scanned.
7. Inspect distribution systems with imaging equipment capable of detecting a minimum temperature difference of 1 degree C at 30 degrees C.
8. Equipment shall detect emitted radiation and convert detected radiation to visual signal.
9. Thermographic surveys should be performed during periods of maximum possible loading but not less than 40 percent of rated load of the electrical equipment being inspected. Refer to NFPA 70B-1994, Section 18-16 (Infrared Inspection).
10. Temperature differences for 1 degree C to 3 degrees C indicate possible deficiency and warrant investigation.
11. Temperature differences of 4 degrees C to 15 degrees C indicated deficiency; repair as time permits.
12. Temperature differences of 16 degrees C and above indicate major deficiency; repair immediately.

END OF SECTION 26 05 71

SECTION 26 05 72 - OVERCURRENT PROTECTIVE DEVICE SHORT-CIRCUIT STUDY

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 a computer-based, fault-current study to determine the minimum interrupting capacity of circuit protective devices.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

B. One-Line Diagram: A diagram which shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

C. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.

D. SCCR: Short-circuit current rating.

E. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

1.4 ACTION SUBMITTALS

A. Product Data: For computer software program to be used for studies.

B. Other Action Submittals: Submit the following after the approval of system protective devices submittals. Submittals shall be in digital form.

1. Short-circuit study input data, including completed computer program input data sheets.
2. Short-circuit study and equipment evaluation report; signed, dated, and sealed by a qualified professional engineer.
    a. Submit study report for action prior to receiving final approval of the distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure

that the selection of devices and associated characteristics is satisfactory.

b. Revised single-line diagram, reflecting field investigation results and results of short-circuit study.

C. At the conclusion of the project, contractor shall have the specified studies updated to reflect "As-Installed" conditions and submit the revised studies as part of the O&M manuals. This includes the electronic software data files, PDF of the study and PDF's of the appropriate labels.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Short-Circuit Study Specialist and Field Adjusting Agency.

B. Product Certificates: For short-circuit study software, certifying compliance with IEEE 399.

1.6 QUALITY ASSURANCE

A. Studies shall use computer programs that are distributed nationally and are in wide use. Software algorithms shall comply with requirements of standards and guides specified in this Section. Manual calculations are unacceptable.

B. Short-Circuit Study Software Developer Qualifications: An entity that owns and markets computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.

1. The computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

C. Short-Circuit Study Specialist Qualifications: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

D. Field Adjusting Agency Qualifications: An independent agency, with the experience and capability to adjust overcurrent devices and to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 COMPUTER SOFTWARE

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. SKM Systems Analysis, Inc.
2. ETAP

B. Comply with IEEE 399 and IEEE 551.

C. Analytical features of fault-current-study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

D. Computer software program shall be capable of plotting and diagramming time-current-characteristic curves as part of its output.

2.2 SHORT-CIRCUIT STUDY REPORT CONTENTS

A. Executive summary.

B. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of the computer printout.

C. One-line diagram, showing the following:

1. Protective device designations and ampere ratings.
2. Cable size and lengths.
3. Transformer kilovolt ampere (kVA) and voltage ratings.
4. Motor and generator designations and kVA ratings.
5. Switchgear, switchboard, motor-control center, and panelboard designations.

D. Comments and recommendations for system improvements, where needed.

E. Protective Device Evaluation:

1. Evaluate equipment and protective devices and compare to short-circuit ratings.
2. Tabulations of circuit breaker, fuse, and other protective device ratings versus calculated short-circuit duties.
3. For 600-V overcurrent protective devices, ensure that interrupting ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.
4. For devices and equipment rated for asymmetrical fault current, apply multiplication factors listed in the standards to 1/2-cycle symmetrical fault current.
5. Verify adequacy of phase conductors at maximum three-phase bolted fault currents; verify adequacy of equipment grounding conductors and grounding electrode conductors at maximum ground-fault currents. Ensure that short-circuit withstand ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.

F. Short-Circuit Study Input Data: As described in "Power System Data" Article in the Evaluations.

G. Short-Circuit Study Output:

1. Low-Voltage Fault Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
   a. Voltage.
   b. Calculated fault-current magnitude and angle.
   c. Fault-point X/R ratio.
   d. Equivalent impedance.
2. Momentary Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
   a. Voltage.
   b. Calculated symmetrical fault-current magnitude and angle.
   c. Fault-point X/R ratio.
   d. Calculated asymmetrical fault currents:
      i. Based on fault-point X/R ratio.
      ii. Based on calculated symmetrical value multiplied by 1.6.
      iii. Based on calculated symmetrical value multiplied by 2.7.
3. Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
   a. Voltage.
   b. Calculated symmetrical fault-current magnitude and angle.
   c. Fault-point X/R ratio.
   d. No AC Decrement (NACD) ratio.
   e. Equivalent impedance.
   f. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a symmetrical basis.
   g. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a total basis.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Obtain all data necessary for the conduct of the study.

1. Verify completeness of data supplied on the one-line diagram. Call any discrepancies to the attention of Engineer.
2. For equipment provided that is Work of this Project, use characteristics submitted under the provisions of action submittals and information submittals for this Project.
3. For relocated equipment and that which is existing to remain, obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers. The qualifications of technicians and engineers shall be qualified as defined by NFPA 70E

B. Gather and tabulate the following input data to support the short-circuit study. Comply with recommendations in IEEE 551 as to the amount of detail that is required to be acquired in the field. Field data gathering shall be under the direct supervision and control of the engineer in charge of performing the study, and shall be by the

engineer or its representative who holds NETA ETT Level III certification or NICET Electrical Power Testing Level III certification.

1. Product Data for Project's overcurrent protective devices involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Obtain electrical power utility impedance at the service.
3. Power sources and ties.
4. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
5. For reactors, provide manufacturer and model designation, voltage rating, and impedance.
6. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip, SCCR, current rating, and breaker settings.
7. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
8. Busway manufacturer and model designation, current rating, impedance, lengths, and conductor material.
9. Motor horsepower and NEMA MG 1 code letter designation.
10. Cable sizes, lengths, number, conductor material and conduit material (magnetic or nonmagnetic).

3.2 SHORT-CIRCUIT STUDY

A. Perform study following the general study procedures contained in IEEE 399.

B. Calculate short-circuit currents according to IEEE 551.

C. Base study on the device characteristics supplied by device manufacturer.

D. The extent of the electrical power system to be studied is indicated on Drawings.

E. Begin short-circuit current analysis at the service, extending down to the system overcurrent protective devices as follows:

1. To normal system low-voltage load buses where fault current is 10 kA or less.
2. Exclude equipment rated 240-V ac or less when supplied by a single transformer rated less than 125 kVA.

F. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Study all cases of system-switching configurations and alternate operations that could result in maximum fault conditions.

G. The calculations shall include the ac fault-current decay from induction motors, synchronous motors, and asynchronous generators and shall apply to low- and medium-voltage, three-phase ac systems. The calculations shall also account for the

fault-current dc decrement, to address the asymmetrical requirements of the interrupting equipment.

1. For grounded systems, provide a bolted line-to-ground fault-current study for areas as defined for the three-phase bolted fault short-circuit study.

H. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault at each of the following:

1. Electric utility's supply termination point.
2. Incoming switchgear.
3. Unit substation primary and secondary terminals.
4. Low-voltage switchgear.
5. Motor-control centers.
6. Control panels.
7. Standby generators and automatic transfer switches.
8. Branch circuit panelboards.
9. Disconnect switches.

3.3 ADJUSTING

A. Make minor modifications to equipment as required to accomplish compliance with short-circuit study.

3.4 DEMONSTRATION

A. Train Owner's operating and maintenance personnel in the use of study results.

END OF SECTION 26 05 72

SECTION 26 05 74 - OVERCURRENT PROTECTIVE DEVICE ARC-FLASH STUDY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes a computer-based, arc-flash study to determine the arc-flash hazard distance and the incident energy to which personnel could be exposed during work on or near electrical equipment.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

B. One-Line Diagram: A diagram which shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

C. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.

D. SCCR: Short-circuit current rating.

E. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

1.4 ACTION SUBMITTALS

A. Product Data: For computer software program to be used for studies.

B. Other Action Submittals: Submit the following submittals after the approval of system protective devices submittals. Submittals shall be in digital form.

1. Arc-flash study input data, including completed computer program input data sheets.
2. Arc-flash study report; signed, dated, and sealed by a qualified professional engineer.
    a. Submit study report for action prior to receiving final approval of the distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure

that the selection of devices and associated characteristics is satisfactory.

C. At the conclusion of the project, contractor shall have the specified studies updated to reflect “As-Installed” conditions and submit the revised studies as part of the O&M manuals. This includes the electronic software data files, PDF of the study and PDFs of the appropriate labels.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Arc-Flash Study Specialist and Field Adjusting Agency.

B. Product Certificates: For arc-flash hazard analysis software, certifying compliance with IEEE 1584 and NFPA 70E.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance procedures according to requirements in NFPA 70E shall be provided in the equipment manuals.

B. Operation and Maintenance Procedures: In addition to items specified in Section 017823 "Operation and Maintenance Data," provide maintenance procedures for use by Owner's personnel that comply with requirements in NFPA 70E.

1.7 QUALITY ASSURANCE

A. Studies shall use computer programs that are distributed nationally and are in wide use. Software algorithms shall comply with requirements of standards and guides specified in this Section. Manual calculations are unacceptable.

B. Arc-Flash Study Software Developer Qualifications: An entity that owns and markets computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.

1. The computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

C. Arc-Flash Study Specialist Qualifications: Professional engineer in charge of performing the study, analyzing the arc flash, and documenting recommendations, licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

D. Field Adjusting Agency Qualifications: An independent agency, with the experience and capability to adjust overcurrent devices and to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 COMPUTER SOFTWARE DEVELOPERS

A. Software Developers:

1. Manufacturers: Subject to compliance with requirements, provide products by the following:
   a. SKM Systems Analysis, Inc.
   b. ETAP

B. Comply with IEEE 1584 and NFPA 70E.

C. Analytical features of device coordination study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

2.2 ARC-FLASH STUDY REPORT CONTENT

A. Executive summary.

B. Study descriptions, purpose, basis and scope.

C. One-line diagram, showing the following:

1. Protective device designations and ampere ratings.
2. Cable size and lengths.
3. Transformer kilovolt ampere (kVA) and voltage ratings.
4. Motor and generator designations and kVA ratings.
5. Switchgear, switchboard, motor-control center and panelboard designations.

D. Study Input Data: As described in "Power System Data" Article.

E. Short-Circuit Study Output: As specified in "Short Circuit Study Output" Paragraph in "Short-Circuit Study Report Contents" Article in Section 260572 "Overcurrent Protective Device Short-Circuit Study."

F. Protective Device Coordination Study Report Contents: As specified in "Protective Device Coordination Study Report Contents" Article in Section 260573 "Overcurrent Protective Device Coordination Study."

G. Arc-Flash Study Output:

1. Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
   a. Voltage.
   b. Calculated symmetrical fault-current magnitude and angle.
   c. Fault-point X/R ratio.
   d. No AC Decrement (NACD) ratio.
   e. Equivalent impedance.

f. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a symmetrical basis.
g. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a total basis.

H. Incident Energy and Flash Protection Boundary Calculations:

1. Arcing fault magnitude with and without required Arc Energy Reduction methods.
2. Protective device clearing time.
3. Duration of arc.
4. Arc-flash boundary.
5. Working distance.
6. Incident energy.
7. Hazard risk category.
8. Recommendations for arc-flash energy reduction.

I. Fault study input data, case descriptions, and fault-current calculations including a definition of terms and guide for interpretation of the computer printout.

2.3 ARC-FLASH WARNING LABELS

A. Comply with requirements in Section 260553 "Identification for Electrical Systems." Produce a 3.5-by-5-inch thermal transfer label of high-adhesion polyester for each work location included in the analysis.

B. The label shall have an orange header with the wording, "WARNING, ARC-FLASH HAZARD," and shall include the following information taken directly from the arc-flash hazard analysis:

1. Location designation.
2. Nominal voltage.
3. Flash protection boundary.
4. Hazard risk category.
5. Incident energy.
6. Working distance.
7. Engineering report number, revision number, and issue date.

C. Labels shall be machine printed, with no field-applied markings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine Project overcurrent protective device submittals. Proceed with arc-flash study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to arc-flash study may not be used in study.

3.2 ARC-FLASH HAZARD ANALYSIS

A. Comply with NFPA 70E and its Annex D for hazard analysis study.

B. Preparatory Studies:

1. Protective Device Coordination Study Report Contents: As specified in "Protective Device Coordination Study Report Contents" Article in Section 260573 "Overcurrent Protective Device Coordination Study."

C. Calculate maximum and minimum contributions of fault-current size.

1. The minimum calculation shall assume that the utility contribution is at a minimum and shall assume no motor load.
2. The maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.

D. Calculate the arc-flash protection boundary and incident energy at locations in the electrical distribution system where personnel could perform work on energized parts.

E. Include medium- and low-voltage equipment locations, except equipment rated 240-V ac or less fed from transformers less than 125 kVA.

F. Safe working distances shall be specified for calculated fault locations based on the calculated arc-flash boundary, considering incident energy of 1.2 cal/sq.cm.

G. Incident energy calculations shall consider the accumulation of energy over time when performing arc-flash calculations on buses with multiple sources. Iterative calculations shall take into account the changing current contributions, as the sources are interrupted or decremented with time. Fault contribution from motors and generators shall be decremented as follows:

1. Fault contribution from induction motors should not be considered beyond three to five cycles.
2. Fault contribution from synchronous motors and generators should be decayed to match the actual decrement of each as closely as possible (e.g., contributions from permanent magnet generators will typically decay from 10 per unit to three per unit after 10 cycles).

H. Arc-flash computation shall include both line and load side of a circuit breaker as follows:

1. When the circuit breaker is in a separate enclosure.
2. When the line terminals of the circuit breaker are separate from the work location.

I. Base arc-flash calculations on actual overcurrent protective device clearing time. Cap maximum clearing time at two seconds based on IEEE 1584, Section B.1.2.

3.3 POWER SYSTEM DATA

A. Obtain all data necessary for the conduct of the arc-flash hazard analysis.

1. Verify completeness of data supplied on the one-line diagram on Drawings and under "Preparatory Studies" Paragraph in "Arc-Flash Hazard Analysis" Article. Call discrepancies to the attention of Engineer.
2. For new equipment, use characteristics submitted under the provisions of action submittals and information submittals for this Project.
3. For existing equipment, whether or not relocated, obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers.

B. Electrical Survey Data: Gather and tabulate the following input data to support study. Comply with recommendations in IEEE 1584 and NFPA 70E as to the amount of detail that is required to be acquired in the field. Field data gathering shall be under the direct supervision and control of the engineer in charge of performing the study, and shall be by the engineer or its representative who holds NETA ETT Level III certification or NICET Electrical Power Testing Level III certification.

1. Product Data for overcurrent protective devices specified in other Sections and involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Obtain electrical power utility impedance at the service.
3. Power sources and ties.
4. Short-circuit current at each system bus, three phase and line-to-ground.
5. Full-load current of all loads.
6. Voltage level at each bus.
7. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in per cent, and phase shift.
8. For reactors, provide manufacturer and model designation, voltage rating and impedance.
9. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip and available range of settings, SCCR, current rating, and breaker settings.
10. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
11. For relays, provide manufacturer and model designation, current transformer ratios, potential transformer ratios, and relay settings.
12. Busway manufacturer and model designation, current rating, impedance, lengths, and conductor material.
13. Motor horsepower and NEMA MG 1 code letter designation.
14. Low-voltage cable sizes, lengths, number, conductor material and conduit material (magnetic or nonmagnetic).
15. Medium-voltage cable sizes, lengths, conductor material, and cable construction and metallic shield performance parameters.

3.4 LABELING

A. Apply one arc-flash label for 600-V ac, 480-V ac, and applicable 208-V ac panelboards and disconnects and for each of the following locations:

1. Motor-control center.
2. Low-voltage switchboard.
3. Switchgear.
4. Medium-voltage switch.
5. Control panel.

3.5 APPLICATION OF WARNING LABELS

A. Install the arc-fault warning labels under the direct supervision and control of the Arc-Flash Study Specialist.

3.6 DEMONSTRATION

A. Engage the Arc-Flash Study Specialist to train Owner's maintenance personnel in the potential arc-flash hazards associated with working on energized equipment and the significance of the arc-flash warning labels.

END OF SECTION 26 05 74

SECTION 26 27 13 - ELECTRICAL DISTRIBUTION SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions); as appropriate, apply to the work specified in this section.

B. Refer to all Electrical specification sections, as well as the plans and specifications for the other various trades and materials and be thoroughly familiar with all provisions regarding electrical work.

1.2 ELECTRIC SERVICE

A. Contractor shall be responsible for obtaining a new 120/208 volt 3 phase 4 wire underground electric service from the local power company, Beauregard Electric, as specified herein and as shown on the Drawings. The Contractor shall be responsible for all utility company fees and for the timely coordination of all utility company work.

1.3 GENERAL

A. All electrical gear furnished as part of this project, panelboards, safety switches, etc. shall be of the same manufacturer unless specified otherwise. Electrical equipment manufactured by a subsidiary or parent company of manufacturer that is prior approved is not itself prior approved unless its own manufacturer's name specifically is listed as being prior approved.

1.4 ARC-FLASH; COORDINATION AND FAULT CURRENT STUDIES

A. As part of the electrical gear shop drawings, the contractor shall perform and submit complete arc–flash, coordination and fault current studies, including phase-to-phase and ground faults for coordinating all elements of the distribution system. These three studies shall be performed and furnished by the successful electrical gear manufacturer. Contractor shall refer to these specification sections for specific study requirements: These studies shall be submitted simultaneously with the gear submittal or the gear submittal will be returned un-reviewed.

1. Overcurrent Protective Device Short-Circuit Study (Cannot be VE'd from project)
2. Overcurrent Protective Device Arc-Flash Study (Cannot be VE'd from project)

B. Provide all arc-flash safety and short circuit current stickers on all panels, switchboards, safety switches, motor control center, etc. as required/specified. Refer to details for additional requirements. Proposed stickers for each individual piece of gear shall be submitted for review as part of shop drawings.

C. Provide and install a fully coordinated electrical distribution system as directed by the Overcurrent Protective Device Coordination Study at no additional costs to the Owner.

D. In addition, this study shall indicate all required settings for adjustable circuit breakers and motor circuit protectors. These settings include instantaneous, short time, long time, ground fault trip characteristics and all-time based pick-up, drop-out and re-close parameters.

E. The contractor shall provide all breakers, trip plugs, solid state breakers, etc. to provide a fully coordinated electrical system as identified in the coordination study. This shall be accomplished as part of the Base Bid and all alternates at no additional costs to the owner and/or design team.

F. Refer to individual specification sections of each specified study for additional requirements.

G. Electrical gear submittals will not be reviewed until all device studies specified are performed, submitted and approved.

H. At the conclusion of the project, contractor shall have the specified studies updated to reflect "As-Installed" conditions and submit the revised studies as part of the O&M manuals. This includes the electronic software data files, PDF of the study and PDFs of the appropriate labels.

1.5 SERIES RATING OF EQUIPMENT

A. The electrical gear provided and installed as part of this project shall not be series rated.

PART 2 - PRODUCTS

2.1 PANELBOARDS

A. Panelboards shall be circuit breaker type using quick-make, quick-break, trip free, thermal magnetic trip indicating, bolt-on circuit breakers. Two and three pole branches and mains shall be common trip. Panelboards shall be dead front safety type with main breaker or main lugs, and number and size of branches as shown on the drawings. Panelboards shall have single, feed through, or double lugs, to accommodate feeder conductors as shown on the drawings, and shall have neutral and ground bus for termination of conductors. Bussing shall be copper.

B. Doors shall be fitted with flush cylinder locks, keys to which shall all on project be alike. Two (2) keys shall be furnished for each lock. Cabinet fronts shall be finished as directed by the Architect/Engineer. Cabinet fronts shall not be removable with door in the locked position. Provide for each panel a directory frame with waterproof transparent plastic window on inside of door and place therein a typewritten identification of all circuits.

C. Directories shall be made only after permanent room numbers have been assigned. Room numbers shown on the construction drawings shall not be used for making directories. Each circuit shall be clearly identified as to use and location (ex: Receptacles Rooms 201, 202 or Lighting Rooms 207, 209, 211, and 213).

D. Cabinets shall be galvanized steel not less than twenty inches (20") in width. Gutters shall not be smaller than minimum dimensions required by the National Electrical Code.

E. Double section panelboards shall be comprised of cabinets of equal dimensions.

F. All panels rated NEMA 1, shall be of the door-in-door type construction providing tool-less access to interior of the panelboard(s).

G. Panelboards shall be as shown in the schedules and shall be completely factory assembled. Do not purchase panelboards or cabinets until shop drawings have been approved. Approved manufacturers include:

1. General Electric
2. Square D
3. Eaton-Cutler Hammer
4. Siemens
5. Approved Equivalent

H. Minimum short circuit current interrupting ratings for circuit breakers shall be 22,000 amps. Where a specific interrupting rating is shown on the drawings, in the panel schedules, or as required by the coordination and fault current study, panelboards and associated circuit breakers shall be rated for that value as a minimum at no additional cost to the owner.

I. In branch circuit panelboards having two (2) vertical columns of devices, circuit numbers shall be such that, starting at the top, odd numbers shall be used in sequence down the left-hand side. See Schedule of Panelboards on drawings for circuit device sizes and number of poles.

J. Construction of panelboards shall be such that, where applicable, any three (3) adjacent single-pole devices are individually connected to each of the three different phases in such a manner that 2 or 3 pole devices, when available, can be installed at any location.

K. UL Listing: Panelboards shall be listed by UL and bear the UL label.

L. Interior panelboards shall be NEMA 1 unless noted otherwise. All exterior panelboards shall be rated NEMA 3R.

2.2 LABELS

A. All switchboards, panelboards, starters, VFD's, contactors, transformers, safety switches and fused safety switches installed by this contractor shall have laminated

phenolic tags with 1/4" characters embossed thereon identifying the equipment by name, voltage, ampacity, phase and number of current carrying conductors such as:

Panel Name
120/208 V - 400A
3 Phase - 4 Wire
Fed From Panel: _____, Circuit _____
Fused @ _____**

The tags shall be fixed to the center of the equipment cover/door with a suitable heavy duty industrial grade adhesive.

**Note – For fused safety switches, label shall include fuse sizes contained therein.

B. Color Coding of labels shall be as follows:

Normal Power	White Background with Black Letters

2.3 SAFETY SWITCHES

A. Furnish and install safety switches at locations and in capacities shown on the drawings, as hereinafter specified and/or as required by the latest edition of the National Electrical Code.

B. Safety switches shall be rated heavy duty and fusible.

C. Safety switches exposed to the weather shall be rated NEMA 3R.

D. Safety switches shall be of the solid neutral type where required by circuit or feeder specified.

E. Safety switch covers shall be internally mechanically held closed when in the ON position and shall be allowed to open in the OFF position. The switch shall come equipped with provisions to allow the switch to be padlocked in the off position.

F. Galvanized angle or other suitable supports shall be provided for switches that cannot be mounted on walls or other rigid surfaces. Switches shall not be supported by conduit alone and shall not be mounted on HVAC or other equipment unless specifically approved by the Architect/Engineer. Verify mounting heights for all exterior locations with Architect/Engineer prior to rough-in.

G. Fuses shall be installed so that fuse rating and type are clearly and easily readable from the front of the disconnect.

H. Safety switches shall be General Electric, Square "D", Eaton Electrical, Siemens or approved equivalent.

2.4 FUSES

A. Unless otherwise noted or specified, all fuse holders shall be equipped with dual-element, time-lag, and current limiting fuses. Provide one (1) spare set of fuses for each size initially installed, with a minimum of three (3) fuses of each size. Spare fuses shall be turned over to the Owner's maintenance supervisor prior to requesting substantial completion inspection.

B. Fuses shall be Gould, Bussman, or approved equivalent.

PART 3 - EXECUTION

3.1 MANUFACTURER'S DIRECTION

A. All electrical gear shall be installed in accordance with the manufacturer's directions. Contractor shall review these directions prior to rough-in. Should any discrepancies exist between the contract documents and the manufacturer's direction, contractor shall advise the engineer in writing.

B. All electrical terminations shall be properly tightened to manufacturer's specifications. Where manufacturer's specifications are not available, contractor shall refer to the NEC and adjust tightness valves (torque) to the NEC published values.

C. Install all safety switches, breakers, disconnects, etc., in accordance with manufacturer's directions and maintain all required NEC clearances. Coordinate exact locations in field with applicable contractors.

END OF SECTION 26 27 13

SECTION 26 43 13 - SURGE PROTECTION FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS

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 field-mounted SPDs for low-voltage (120 to 600 V) power distribution and control equipment.

1.3 DEFINITIONS

A. I-nominal: Nominal discharge current.

B. MCOV: Maximum continuous operating voltage.

C. Mode(s), also Modes of Protection: The pair of electrical connections where the VPR applies.

D. MOV: Metal-oxide varistor; an electronic component with a significant non-ohmic current-voltage characteristic.

E. OCPD: Overcurrent protective device.

F. SCCR: Short-circuit current rating.

G. SPD: Surge protective device.

H. VPR: Voltage protection rating.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
2. Copy of UL Category Code VZCA certification, as a minimum, listing the tested values for VPRs, I nominal ratings, MCOVs, type designations, OCPD requirements, model numbers, system voltages, and modes of protection.

3. Copies of test reports from a recognized independent testing laboratory, capable of producing 200kA surge current waveforms, verifying the suppressor can survive published surge current rating on a per mode basis using the ANSI/IEEE C62.41 impulse waveform C3 (8 x 20 microsecond, 20kV/10kA). Test data on an individual module is not acceptable. In house testing will not be accepted.
4. Copy of warranty statement clearly establishing the terms and conditions to the building/facility owner/operator.

1.5 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

B. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For SPDs to include in maintenance manuals.

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to replace or replace SPDs that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Fifteen (15) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL SPD REQUIREMENTS

A. SPD with Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

C. Comply with UL 1449.

D. MCOV of the SPD shall be the nominal system voltage. MCOV shall be a tested value per section 37.7.3 of UL1449 4th Edition.

2.2 SERVICE ENTRANCE AND TRANSFER SWITCH SUPPRESSOR (Type A)

A. Basis of Design: Subject to compliance with requirements. Provide comparable product to the following:

1. Current Technology “TG3” Series. Equivalent by Square D SurgeLogic “EM Series”

B. SPDs: Listed as Type 1 SPD per UL1449 4th Edition

1. SPDs with the following features and accessories:
   a. Integral disconnect switch (where breaker not provided).
   b. Internal thermal protection that disconnects the SPD before damaging internal suppressor components.
   c. Indicator light display for protection status.
   d. Form-C contacts: one normally open and one normally closed, for remote monitoring of protection status, and Advanced monitoring with status, surge counter and history log of events.

C. Comply with UL 1283 with a maximum attenuation of 54dB based on 50ohm insertion loss test per MIL-STD-220B.

D. Peak Surge Current Rating: The minimum single-pulse surge current withstand rating per mode shall not be less than 200 kA (400kA per phase). The peak surge current rating shall NOT be the arithmetic sum of the ratings of the individual MOVs in a given mode. SPD manufacturer shall provide independent 3rd party testing validating unit is capable of surviving a single surge at the specified rating or up to and not to exceed 200,000 kA.

E. Protection modes and UL 1449 VPR for grounded wye circuits with 208Y/120V, three-phase, four-wire circuits shall not exceed the following:

1. Line to Neutral: 700 V for 208Y/120 V.
2. Line to Ground: 700 V for 208Y/120 V.
3. Line to Line: 1200 V for 208Y/120 V.

F. Protection modes and UL 1449 VPR for 240/120 V, single-phase, three-wire circuits shall not exceed the following:

1. Line to Neutral: 700 V.
2. Line to Ground: [700 V] [1000 V].
3. Line to Line: 1200 V.

G. SCCR: Equal or exceed 200 kA.

H. I nominal Rating: 20 kA and compliance to all UL96A requirements for ac surge protection.

2.3 ENCLOSURES

A. Indoor Enclosures: NEMA 250, Type 1.

B. Outdoor Enclosures: NEMA 250, Type 3R.

2.4 CONDUCTORS AND CABLES

A. Power Wiring: SPD shall be equipped with mechanical lugs that can accept up to #2 AWG wire. Where conductors between SPD and switchgear exceed 10' in total length, they shall be "High Performance Interconnect" (HPI) cables with Ultra Low impedance characteristics at 10kHz and above.

B. Class 2 Control Cables: Multi-conductor cable with copper conductors not smaller than No. 18 AWG, complying with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

C. Class 1 Control Cables: Multi-conductor cable with copper conductors not smaller than No. 14 AWG, complying with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1.

B. Install an OCPD or disconnect as required to comply with the UL listing of the SPD.

C. Install SPDs with conductors between suppressor and points of attachment as short and straight as possible and adjust circuit-breaker positions to achieve shortest and straightest leads. Do not splice and extend SPD leads unless specifically permitted by manufacturer. Do not exceed manufacturer's recommended lead length. Do not bond neutral and ground. If installed lead length exceeds 10', SPD manufacturer shall provide a low impedance cable that improves the installed performance.

D. Use crimped connectors and splices only. Wire nuts are unacceptable.

E. Wiring:

1. Power Wiring: Comply with wiring methods in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
2. Controls: Comply with wiring methods in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.2 FIELD QUALITY CONTROL

A. Contractor shall perform the following tests and inspections with the assistance of a factory-authorized service representative.

1. Compare equipment nameplate data for compliance with Drawings and Specifications.

2. Inspect anchorage, alignment, grounding, and clearances.
3. Verify that electrical wiring installation complies with manufacturer's written installation requirements.

B. An SPD will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.3 SYSTEM TESTING

A. Upon completion of installation, provide the start-up and testing services of a factory-authorized and factory-trained local service representative. The tests shall include:

1. Off-line Testing: Impulse injection to verify the system tolerances as well as verification of proper facility neutral-to-ground bond. Compare field test results to factory benchmark test parameters supplied with each individual unit.
2. On-line Testing: Verify that suppression and filtering paths are operating with 100% protection as well as verification of proper facility neutral-to-ground bond by measuring neutral-to-ground current and voltage and by visual inspection.
3. Voltage measurements from Line-to-Ground (L-G), Line-to-Neutral (L-N), Line-to-Line (L-L), and Neutral-to-Ground (N-G), taken at the time of the testing procedure.

3.4 DOCUMENTATION AND REPORTING

A. Record results of field testing and compare to factory benchmark test parameters supplied with each individual surge protective device. Indicate that the integrity of neutral-to-ground bonds were verified through testing and visual inspection, and that grounding bonds were observed to be in place.

B. Submit to the Owner’s representative and to the Architect/Engineer copies of the startup test results and the factory benchmark testing results for confirmation of proper suppression filter system function, as required by this section. Provide the number of copies as required by Division One and the Electrical General Provisions section; and three copies where not otherwise specified.

END OF SECTION 26 43 13

SECTION 311000 - SITE CLEARING

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. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Removing above- and below-grade site improvements.
5. Disconnecting, capping or sealing, and removing site utilities.

B. Related Requirements:

1.3 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches (50 mm) in diameter; and free of weeds, roots, toxic materials, or other nonsoil materials.

D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

A. Topsoil Stripping and Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.

1.7 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.

C. Utility Locator Service: Notify LA One Call for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place.

E. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 – EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 EXISTING UTILITIES

A. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

3.3 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Grind down stumps and remove roots larger than 3 inches in diameter, obstructions, and debris to a depth of 24 inches below exposed subgrade.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to the adjacent original ground.

3.4 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.5 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

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. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, and pavements.
3. Excavating and backfilling for structures.
4. Subbase course for concrete walks and pavements.
5. Subsurface drainage backfill for walls and trenches.
6. Excavating and backfilling trenches for utilities and pits for buried utility structures.

B. Related Requirements:

1. Section 033000 “Cast-in-Place Concrete”
2. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
3. Section 024650 "Vinyl Sheet Piles"
4. Section 321313 “Concrete Paving”

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation or contract time.

E. Fill: Soil materials used to raise existing grades.

F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

G. Subbase Course: Aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete walk. Commercially available as “610 Roadbase”.

H. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase or topsoil materials.

I. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of the following manufactured products required:

1. Geotextiles.
2. Controlled low-strength material, including design mixture.

B. Material Test Reports: For each soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D 2487.
2. Laboratory compaction curve according to ASTM D 698.

1.5 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service Louisiana One Call for area where Project is located before beginning earth-moving operations.

C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials.

B. Satisfactory Soils: Lime-treated Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: <40>.
2. Plasticity Index: <10-20>.
3. Lime Content: 6% by volume

a. Lime treatment shall occur at the borrow pit – no on-site mixing will be permitted.
b. Properties, including confirmation of lime content by volume, shall be verified by owner's testing agency prior and submitted for approval.

C. Unsatisfactory Soils: Any soils that do not satisfy the requirements for "Satisfactory Soils".

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content to at least 95% of the Standard Proctor maximum dry density at time of compaction.

D. Subbase Material: Crushed stone conforming to the requirements of Section 1003.03, Paragraph B of the Specifications in Part X of the Louisiana Standard Specifications for Roads and Bridges published by the Louisiana Department of Transportation and Development (LADOTD). Identified as "610 Roadbase".

E. Bedding Course: Crushed stone conforming to the requirements of Section 1003.03, Paragraph B of the Specifications in Part X of the Louisiana Standard Specifications for Roads and Bridges published by the Louisiana Department of Transportation and Development (LADOTD). Identified as "610 Roadbase".

F. Sand: ASTM C 33; fine aggregate.

G. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILES

A. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polypropylene and complying with the following, measured per test methods referenced:

1. Survivability: As follows:
    a. Grab Tensile Strength: 315 lbf; ASTM D 4632.
    b. Trapezoidal Tear Strength: 110 lbf; ASTM D 4533.
    c. CBR Puncture Strength: 900 lbf; ASTM D 6241.
    d. Grab Tensile Elongation: 15%; ASTM D 4632
2. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
3. Permittivity: 0.05 per second, minimum; ASTM D 4491.
4. Water Flow Rate: 4 gpm/ft^2; ASTM D 4491
5. UV Stability: 70 percent after 500 hours' exposure; ASTM D 4355.
6. Manufacturers: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
    a. Mirafi 600X by Tencate
    b. Geotex 315ST by Propex Geosolutions

2.3 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material: Self-compacting, low-density, flowable concrete material produced from the following:

1. Portland Cement: ASTM C 150/C 150M, Type I or Type II.
2. Fly Ash: ASTM C 618, Class C or F.
3. Normal-Weight Aggregate: ASTM C 33, 1-inch nominal maximum aggregate size.
4. Foaming Agent: ASTM C 869/.
5. Water: ASTM C 94/.
6. Air-Entraining Admixture: ASTM C 260/.

B. Produce low-density, controlled low-strength material with the following physical properties:

1. As-Cast Unit Weight: 36 to 42 lb/cu. ft. at point of placement, when tested according to ASTM C 138/.
2. Compressive Strength: 80 psi, when tested according to ASTM C 495.

C. Produce conventional-weight, controlled low-strength material with 80-psi compressive strength when tested according to ASTM C 495.

2.4 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades. No modification of contract amount or time will be awarded for unanticipated dewatering efforts, or otherwise for damage (and any required repairs and testing) caused by a lack of proper dewatering.

B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

E. Damage to the site that is a result of insufficient dewatering efforts, as determined by the Architect and/or Engineer, will be repaired by the contractor, with no modification of contract amount or time.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include soil materials and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials, replace with satisfactory soil materials.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand or with an air spade to indicated lines, cross sections, elevations, and subgrades. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.7 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clear each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trench Bottoms: Excavate trenches 6 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

E. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3.8 SUBGRADE INSPECTION

A. Notify Architect when excavations have reached required subgrade.

B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10- wheel, tandem-axle dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.9 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.10 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring, bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

D. Backfill voids with satisfactory soil while removing shoring and bracing.

E. Initial Backfill:

1. Soil Backfill: Place and compact initial backfill of satisfactory soil to a height of 12 inches over the pipe or conduit.

a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

2. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches over the pipe or conduit. Coordinate backfilling with utilities testing.

F. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.
2. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.

G. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.13 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.14 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF SUBGRADE, SOIL BACKFILLS AND FILLS

A. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

B. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

C. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

D. Compact soil materials to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.16 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.17 SUBBASE UNDER PAVEMENTS AND WALKS

A. Place subbase course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course under pavements and walks as follows:

1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends. Prior to beginning installation, grade area to be covered smooth, remove any foreign materials and lumps of soil that would contaminate subbase course or interfere with installation of the geotextile.
2. Shape subbase course to required crown elevations and cross-slope grades.
3. Place subbase course 6 inches or less in compacted thickness in a single layer.
4. Place subbase course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
5. Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 90 percent of maximum

dry unit weight according to ASTM D 698.

3.18 QUALITY CONTROL FIELD

A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Testing agency will test compaction of subbase and soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2937, and ASTM D 6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.

D. Testing agency will positively identify and document depths of excavations following satisfactory proof- roll and prior to installation of backfill.

E. Testing agency will positively identify and document thicknesses of layers of backfill and fill prior to compaction.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.19 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 312100 - SITEWORK

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 SCOPE

A. Site excavation, preparation, fill, building pad construction, drainage, and grading operations, as indicated on the Drawings.

1.3 SUMMARY

A. Section Includes:

1. Preparing subgrades for slabs-on-grade.
2. Excavating and backfilling for buildings and structures.
3. Subsurface drainage backfill for walls and trenches.
4. Excavating and backfilling trenches for utilities and pits for buried utility structures.

B. Related Requirements:

1. Section 316328 "Drilled Cast-In-Place Concrete Shafts" for excavation of shafts and disposal of surplus excavated material.

1.4 UNIT PRICES

A. Contractor is to provide (separate) unit (cubic yard) pricing for excavation and disposal of material and installation and compaction of imported satisfactory material.

1.5 DEFINITIONS

A. Backfill: Approved soil material or controlled low-strength material used to fill an excavation.

B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

C. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation or contract time.

E. Fill: Soil materials used to raise existing grades.

F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

G. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase or topsoil materials.

H. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.6 ACTION SUBMITTALS

A. Material Test Reports: For each soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D 2487.
2. Laboratory compaction curve according to ASTM D 698.

1.7 INFORMATIONAL SUBMITTALS

A. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.8 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

1.9 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service Louisiana One Call for area where Project is located before beginning earth-moving operations.

C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials for Structural Fill.

B. Structural Fill: Structural, Lime-treated Lean Sandy-Clay; Soil Classification Group "CL" according to ASTM D 2487; with organic content less than 3%, sand content not to exceed 79%, silt content not to exceed 60%, free of debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: less than 40 / 39 or less (prior to lime treatment)
2. Liquid Limit: less than 40 / 39 or less (after lime treatment)
3. Plasticity Index: between 10 and 20 (prior to lime treatment).
4. Plasticity Index: between 8 and 18 (after lime treatment).
5. Lime Treatment: 2-to-3% by Dry Weight / 6-9% by Volume

a. Treatment shall utilize pelletized "Quick Lime" for stabilization.
b. Lime Stabilization shall occur at the borrow pit – no on-site mixing shall be permitted.
c. Properties, <u>including confirmation of lime content by volume</u>, shall be verified by owner's testing agency prior to excavation or installation.
d. Lime Stabilized Structural Fill shall be installed in 6" to 8" loose lifts (approximately 6" compacted lifts), and mechanically compacted to 95% of the Standard Proctor Maximum Dry Density at -1% to +3% of the Optimum Moisture as Determined by ASTM D698.

C. Unsatisfactory Soils: Any soils that do not satisfy the requirements for "Satisfactory Soils".

1. Unsatisfactory soils also include satisfactory soils not maintained within 1 percent (dry) and 3 percent (wet) of optimum moisture content at time of compaction.

D. Sand: ASTM C 33; fine aggregate.

E. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades. No modification of contract amount or time will be awarded for unanticipated dewatering efforts, or otherwise for damage (and any required repairs) caused by a lack of proper dewatering.

B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

E. Damage to the site that is a result of insufficient dewatering efforts, as determined by the Architect and/or Engineer, will be repaired by the contractor, with no modification of contract amount or time.

3.3 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include soil materials and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials, replace with satisfactory soil materials.

3.4 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trench Bottoms: Excavate trenches 6 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

3.6 SUBGRADE INSPECTION

A. Notify Architect when excavations have reached required subgrade.

B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.8 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing trash and debris.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

D. Backfill voids with satisfactory soil while removing shoring and bracing.

E. Initial Backfill:

1. Soil Backfill: Place and compact initial backfill of satisfactory soil to a height of 12 inches over the pipe or conduit.

a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

F. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

G. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.10 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.11 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 1 percent (dry) and 3 percent (wet) of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 3 percent and is too wet to compact to specified dry unit weight.

3.12 COMPACTION OF SUBGRADE, SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

C. Compact soil materials to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.13 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Testing agency will test compaction of soils in place according to ASTM D 6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of building slab but in no case fewer than three tests.
2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.

D. Testing agency will positively identify and document depths of excavations following satisfactory proof-roll and prior to installation of backfill.

E. Testing agency will positively identify and document thicknesses of layers of backfill and fill prior to compaction.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.15 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of, off Owner's property.

END OF SECTION 312100

SECTION 314116 – VINYL SHEET PILES

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. Vinyl Sheet Piles

B. Related Requirements:

1. Section 316219 “Timber Piles”.

2. Section 061063 "Exterior Rough Carpentry."

1.3 ACTION SUBMITTALS

A. Product Data: Include manufacturer's specifications and dimensional data and written instructions for handling, storing, installing, and finishing treated material.

1.4 INFORMATIONAL SUBMITTALS

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials per manufacturer’s recommendations in a manner to prevent damage prior to installation.

PART 2 - PRODUCTS

2.1 VINYL SHEET PILING

A. Sheet pile profile shall be manufactured with an interlocking feature that ensures adjacent panels maintain alignment. The sheeting shall be homogeneous, uniform in color, free from visible cracks, and free from other injurious defeats.

B. Sheet Piling shall have prefabricated corners specifically fabricated for the piles being used.

C. Entire thickness of sheeting shall be high impact and UV stabilized Vinyl Compound having a minimum exposure life of 50 years.

D. Minimum Average Physical Properties of the Sheeting shall not be less than the following:

1.	Color	Grey
2.	Nominal Wall Thickness	0.375 inches
3.	Allowable Moment	3500 ft-lbs/ft
4.	Allowable Shear	2000 lbs/ft
5.	Moment of Inertia.	48.0 in^4/ft
6.	Modulus of Elasticity	380,000 psi
7.	Impact Resistance	800 in-lbs
8.	Peak Tensile Stress	7000 psi @ 5% strain

E. Manufacturing facility shall have impact Testing Capabilities (ASTM D-4226) on site. Data and coupons from test shall be provided to engineer or owner upon request.

F. Material Certification - manufacturer shall provide Letter of Certification assuring that sheet pile meets requirements of this specification.

2.2 MANUFACTURERS

A. TIDEWALL - P.O Box 608, West Middlesex, PA, 16159, Phone: 724-528-5900

B. CREATIVE PULTRUSIONS, INC. - 214 Industrial Lane Alum Bank, PA 15521

C. CRANE MATERIALS INTERNATIONAL - 1165 Northchase Parkway Suite 300, Marietta, GA 30067 United States

D. Other Manufacturers – Contractor may submit for prior approval of other vinyl sheet pile manufacturers NOT LESS THAN 14 DAYS PRIOR TO THE BID DATE. Any requests for prior approval shall have a complete product data submittal, with complete written specifications of all materials and warranties required by this specification. It shall be the sole decision and discretion of the Engineer as to the acceptance of the proposed substitute manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Drive or vibrate sheet pile in place using leads or using the installed framing that supports the top of the sheet pile to maintain alignment during installation. If the framing is used, and any of the framing is damaged during the piling installation operation the damaged framing shall be replaced at the contractor's expense.

B. Install sheet pile to elevations shown on the plans. If an obstruction is encountered that prevents installing the piling to required elevation, the Engineer shall be notified for directions on proceeding.

C. Piles driven out of interlock with adjacent piles or otherwise damaged shall be removed and replaced by new piles at the contractor's expense.

END OF SECTION 314116

SECTION 321220 - CRUSHED LIMESTONE BASE

PART 1 - GENERAL

1.1 SUMMMARY

A. This work consists of the installation of crushed limestone as a finished surfacing at specified grades, and/or to bring the subbase to indicated grades, as well as the installation of a geotextile separation fabric under the crushed stone.

PART 2 - MATERIALS

2.1 CRUSHED LIMESTONE MATERIALS

A. Crushed Limestone Material: Crushed limestone base shall conform to the requirements of Section 1003.03, Paragraph B of the Specifications in Part X of the Louisiana Standard Specifications for Roads and Bridges published by the Louisiana Department of Transportation and Development (LADOTD). Identified as "610 Roadbase".

2.2 GEOTEXTILE SEPARATION FABRIC

A. Geotextile Separation Fabric: Woven geotextile fabric, manufactured for separation applications, made from polypropylene and complying with the following, measured per test methods referenced:

1. Minimum Performance Specifications
    1. Grab Tensile Strength: 315 lbf; ASTM D 4632.
    2. Trapezoidal Tear Strength: 110 lbf; ASTM D 4533.
    3. CBR Puncture Strength: 900 lbf; ASTM D 6241.
    4. Grab Tensile Elongation: 15%; ASTM D 4632
2. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
3. Permittivity: 0.05 per second, minimum; ASTM D 4491.
4. Water Flow Rate: 4 gpm/ft^2; ASTM D 4491
5. UV Stability: 70 percent after 500 hours' exposure; ASTM D 4355.

B. Manufacturers & Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:

1. Mirafi 600X by Tencate
2. Geotex 315ST by Propex Geosolutions

C. Proposed alternate products shall meet or exceed all of the Minimum Performance Specifications listed in Part 2.2.A.1-5 above, in order to be considered equal and acceptable for use.

D. Note: Proposed alternate products not meeting or exceeding all of the Minimum Performance Specifications above shall be rejected.

PART 3 - INSTALLATION

3.1 INSTALLATION

A. Prior to beginning installation, grade area to be covered smooth, remove any foreign materials and lumps of soil that would contaminate the base course or interfere with the installation of the geotextile fabric.

B. Install geotextile separation fabric in strict accordance with manufacturers written instructions. Prior to beginning any installation, contractor shall provide Architect with a copy of these written instructions.

E. After fabric is in place, install crushed limestone in six inch (maximum) lifts and in accordance with Section 312000 “Earth Moving.” Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 90 percent of maximum dry unit weight according to ASTM D 698. Grade smooth and roll after each lift is installed.

END OF SECTION 321220

SECTION 323100 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Fence framework, fabric, and accessories at areas and locations indicated on the drawings.

B. Temporary Construction Fencing

C. Excavation for post bases; concrete foundation for posts.

D. Gates and related hardware.

1.02 REFERENCES

A. ASTM A116 - Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric.

B. ASTM A123 - Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.

C. ASTM C94 - Ready-mixed Concrete.

D. ASTM F567 - Installation of Chain-Link Fence.

E. Chain Link Fence Manufacturers Institute (CLFMI) - Product Manual.

F. Industrial Fencing Specifications of the International Fence Industry Association and the Chainlink Manufacturers Institute.

1.03 DESCRIPTION

A. Fence Height: Refer to notes and details on drawings.

B. Line Post Spacing: Equally spaced, not to exceed 10’-0” on center.

C. Concrete Footings: 36” deep (48” when height exceeds 6’) by 12” diameter; allow minimum 2” ground cover of top of footing.

1. Coordinate footing installation with details in drawings.
2. Coordinate footing installation with elevations contours indicated on Site Plan and details.

1.04 SUBMITTALS

A. Fence component product data sheets.

B. Details indicating typical fence installation, including line posts, terminal posts, and gate posts, footings, gates, accessories, and other conditions applicable to the project.

1.05 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM F567.

1.06 MANUFACTURER'S QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing fencing products of the type(s) specified and/or indicated, and having been in business for a minimum of 5 years.

1.07 INSTALLER'S QUALIFICATIONS

A. Installer: Company specializing in installing fencing products of the type(s) of fencing specified and/or indicated, and performing projects of similar size, and having been in business for a minimum of 5 years.

PART 2 - PRODUCTS

2.01 MATERIALS AND COMPONENTS

A. Materials and Components: Conform to CLFMI Product Manual.

B. Fabric Size: CLFMI Standard Industrial service.

C. Intermediate Posts: *Type I round.*

D. Terminal, Corner, Rail, Brace, and Gate Posts: Type I round.

E. Concrete: In compliance with ACI standards for such applications.

2.03 COMPONENTS

A. **Terminal Posts & Corner Posts: 3-inch Diameter, Schedule 40 Hot-Dipped Galvanized steel pipe. Provide 48-inch (minimum) embedment in concrete footing, or concrete foundation, as required by application and details.**

B. **Gate Posts: 3-inch or 4-inch Diameter (as recommended for the gate size) Schedule 40 Hot-Dipped Galvanized steel pipe. Provide 48-inch (minimum) embedment in concrete footing, or concrete foundation, as required by application and details.**

C. **Line Posts: 2-inch Diameter, Schedule 40 Hot-Dipped Galvanized steel pipe. Provide 36-inch (minimum) embedment in concrete footing, or concrete foundation, as required by application and details.**

D. **Post Caps: Provide pre-formed post caps to match pipe diameter at all posts.**

1. **Provide post caps with integral eye for passage of top rail where applicable.**
2. **Provide post caps with dome cap where applicable.**

E. **Top Rails: 1-1/4-inch Diamter (1-5/8-inch O.D.) Schedule 40 Hot-Dipped Galvanized steel pipe.**

1. **Provide sleeve joint splices at all top rail butt joints.**

F. **Gates: Framework & diagonal bracing as recommended for sizes indicated. Gate frames shall be 1-1/4-inch (1-5/8-inch O.D.) minimum, shop fabricated, with welded construction at all joints.**

G. **Fabric: Minimum 9 Gauge Heavy-Duty Hot-Dipped Galvanized Wire Fabric with 2-inch diamond mesh. Provide fencing fabric with knuckled top & bottom selvage.**

E. **No Climb Fabric: Where indicated or noted, provide Galvanized 14 gauge wire in 3/8" fabric with knuckled selvage.**

F. **Fabric Tension Bars: Minimum 3/16" x 3/4" hot-dipped galvanized, single-piece full-height of fabric.**

G. **Fabric Tension Bands: Minimum 11 gauge x 7/8" wide, galvanized.**

H. **Fabric Tension Wire: 7 gauge coated steel coil spring wire.**

I. **Tension Wire Ties: Hog-rings at 12" o.c. maximum.**

J. **Barbed Wire Arms – Where indicated or noted, provide and install 3-wire hot-dipped galvanized barbed wire arms on top of line, corner, and gate posts.**

K. **Barbed Wire – Zinc coated barbed wire strands, 12x12 gauge with 4 points @ 4" spacing.**

L. **Debris & Privacy Screen – Where indicated or noted provide and install Tight-Knit Woven Polypropylene Screen Netting with reinforced black binding and 2" perimeter edge reinforcement and brass gromets spaced at 24" o.c. (maximum), and at each corner.**
Opacity: 90% visual block.
Color: Black.

END OF SECTION 329200

SECTION 329200 – HYDROSEEDING AND SODDING

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. Topsoil
2. Final Grading
3. Hydoseeding
4. Solid Sod

B. Related Sections include the following:

1. Section 022300 Site Clearing for topsoil stripping and stockpiling.
2. Section 023000 Earthwork for excavation, filling and backfilling, and rough grading.
3. Section 0334100 Storm Utility Drainage Piping for subsurface drainage.

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer whose work has resulted in successful lawn and plantings establishment.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Hydroseed Lawns: Deliver at time of application only.

B. Solid Sod: Deliver on pallets, store in area as directed by General Contractor; maintain moisture levels of sod.

1.6 SCHEDULING

A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

B. Do not undertake hydroseed operations when chance of rain is imminent within a 48 hour period after application.

1.7 LAWN MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than time required for vigorous growth to be noticeable and all bare or eroded areas are sustaining growth.

B. Maintain and establish lawn by watering, fertilizing, weeding, etc. Roll, regrade, and replant bare or eroded areas and re-hydroseed to produce a uniformly smooth lawn.

C. Watering: The Contractor shall provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.

2. Water lawn at a minimum rate of 1 inch per week.

D. Mow lawn as soon as top growth is tall enough to cut. Remove no more than 40 percent of grass-leaf growth in initial mowing. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial mowing to obtain grass height of 2 to 3 inches.

E. Lawn Post-fertilization: Apply fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to lawn area.

2. Fertilizer mix to include herbicide to inhibit growth of weeds during initial growth period.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 4 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

2.2 HYDROSEED

A. Solution of water, fertilizer, combination of Rye and Bermuda or St. Augustine grass seed and dye.

2.3 SOLID SOD

A. Farm-grown, palletized St. Augustine sod squares. Provide sod with uniform density, color, and texture, strongly rooted and capable of vigorous growth when planted.

2.4 PLANTING SOIL MIX

A. Topsoil mixed with a blend of bonemeal and commercial fertilizer.

2.5 PLANT MATERIALS

A. Shrubs and low-growth plants in metal or plastic nursery containers.

B. Groundcover plants and bedding plants in plastic trays (multiple or single).

C. Trees delivered in plastic nursery containers.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Lay out areas of lawns and planting beds and obtain approval from architect for layout; adjust areas as directed.

3.3 LAWN PREPARATION

A. Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

B. Finish Grading: Grade areas to be hydro-seeded or sod to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be hydroseeded or sod laid in the immediate future.

C. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Restore areas if eroded or otherwise disturbed after finish grading and prior to hydroseeding operations; replace dead sod squares.

3.4 HYDROSEEDING

A. Hydroseed areas indicated on the Drawings, as well as any areas disturbed or otherwise affected by construction operations.

B. Prior to installation of hydroseeding, fill, level, and fine grade all areas to drain. If finish grade elevations are provided on the Drawings, grade areas to within 0.5" +/-, prior to installation.

C. Spray-apply for uniform coverage & sufficient density for full growth free of bare spots, voids, etc.

D. The Contractor shall maintain, water, and fertilize all hydroseeded areas until new grass is fully established.

E. Backfill and re-grade any areas affected by erosion or settlement, to result in a uniformly graded area.

F. Re-seed areas not exhibiting full coverage growth, washed away by runoff or otherwise barren.

3.5 SOLID SOD

A. Where indicated in the drawings, install Solid St. Augustine Sod.

B. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

C. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod squares; do not stretch or overlap. Stagger sod strips or squares to offset joints in adjacent courses.

D. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a uniformly smooth surface. Work sifted soil or fine sand between cracks of pieces of sod as required to maintain lawn continuity.

E. Saturate sod with fine water spray within two hours of planting. During first week, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1½" below sod.

3.6 SATISFACTORY LAWNS

A. Satisfactory Lawn: At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are established and considered satisfactory by the Owner.

3.7 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after lawn is established.

END OF SECTION 329200

SECTION 334100 - STORM UTILITY DRAINAGE PIPING

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. Pipe and fittings.
2. Non-pressure transition couplings.
3. Expansion joints and deflection fittings.
4. Drains.
5. Encasement for piping.
6. Catch basins.
7. Stormwater inlets.

1.3 DEFINITIONS

A. PVC: Poly-Vinyl Chloride

B. PE: PolyEthylene

C. EPDM: Ethylene Propylene Diene Monomer

D. FRP: Fiberglass-reinforced

1.4 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic manholes, pipe, and fittings in direct sunlight.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

C. Handle manholes according to manufacturer's written rigging instructions.

D. Handle catch basins and stormwater inlets according to manufacturer's written rigging instructions.

1.5 PROJECT CONDITIONS

A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:

1. Notify Owner and Architect no fewer than seven (7) days in advance of proposed interruption of service.
2. Do not proceed with interruption of service without Owner's and Architect's written approval.

PART 2 - PRODUCTS

2.1 PVC PIPE AND FITTINGS

A. PVC Corrugated Piping:

1. Pipe: ASTM F 949, PVC, corrugated pipe with bell-and-spigot ends for gasketed joints.
2. Fittings: ASTM F 949, PVC molded or fabricated, socket type.
3. Gaskets: ASTM F 477, elastomeric seals.

B. PVC Gravity Piping:

1. Pipe and Fittings: ASTM F 679, PVC gravity sewer pipe with bell-and-spigot ends and with integral ASTM F 477, elastomeric seals for gasketed joints.

C. PVC Constant Stiffness Thermoplastic Pipe:

1. Pipe: A2000 PVC - ASTM F 949, PVC, corrugated exterior, and smooth interior pipe with integrally formed bell-and-spigot ends for gasketed joints. PVC pipe shall be manufactured from 12454 cell class material per ASTM D1784. Pipe and fittings shall have a minimum stiffness of 46 lbs./in./in. when tested in accordance with ASTM D2412. Manufacturer shall provide documentation showing no leakage when gasketed pipe joints are tested in accordance with ASTM test method D3212.
2. Fittings: ASTM F 949, PVC smooth interior. To ensure compatibility and uniformity of size, all fittings shall be manufactured by the pipe manufacturer.
3. Gaskets: ASTM F 477, elastomeric seals.

2.2 CONCRETE PIPE AND FITTINGS

A. Reinforced-Concrete Pipe and Fittings: ASTM C 76 (ASTM C 76M).

1. Bell-and-spigot ends and gasketed joints with ASTM C 443 (ASTM C 443M), rubber gaskets
2. Class III, or better.

2.3 NONPRESSURE TRANSITION COUPLINGS

A. Comply with ASTM C 1173, elastomeric, sleeve-type, reducing or transition coupling, for joining underground nonpressure piping. Include ends of same sizes as piping to be joined, and corrosion-resistant-metal tension band and tightening mechanism on each end.

B. Sleeve Materials:

1. For Concrete Pipes: ASTM C 443 (ASTM C 443M), rubber.
2. For Cast-Iron Soil Pipes: ASTM C 564, rubber.
3. For Fiberglass Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
4. For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
5. For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.

C. Unshielded, Flexible Couplings:

1. 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:

2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

a. Dallas Specialty & Mfg. Co.
b. Fernco Inc.
c. Logan Clay Pipe.
d. Mission Rubber Company; a division of MCP Industries, Inc.
e. NDS Inc.
f. Plastic Oddities; a division of Diverse Corporate Technologies, Inc.
g. Contech.

3. Description: Elastomeric sleeve with stainless-steel shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.

2.4 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, ACI 350/350R (ACI 350M/350RM), and the following:

1. Cement: ASTM C 150, Type II.
2. Fine Aggregate: ASTM C 33, sand.
3. Coarse Aggregate: ASTM C 33, crushed gravel.
4. Water: Potable.

B. Portland Cement Design Mix: 4000 psi (27.6 MPa) minimum, with 0.45 maximum water/cementitious materials ratio.

1. Reinforcing Fabric: ASTM A 185/A 185M, steel, welded wire fabric, plain.
2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (420 MPa) deformed steel.

2.5 CATCH BASINS

A. Cast-in-place Concrete Catch Basins:

1. Meet LADOTD standards and specifications listed on project drawings. If none are listed, refer to the latest LADOTD Standard Specifications for Roads and Bridges and Standard Plans online.
2. Grout catch basin bottom smooth to slope 1" toward the center or flowline of the basin, with a continuous slope through the bottom flowline from the upstream pipe to the downstream pipe. There shall be no standing water in the catch basin. Cleaning of the downstream pipes may be required to ensure no standing water in the new drainage system for a dry environment.

B. Standard CB-01 Precast Concrete Catch Basins:

1. Description: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.
2. Base Section: 8-inch minimum thickness for floor slab and 7-inch minimum thickness for walls and base riser section, and separate base slab or base section with integral floor.
3. Riser Sections: 7-inch minimum thickness, 4-foot – 2-inch x 3-foot – 2.25-inch outside dimensions, and inside dimensions 2'- 0.25 inches x 3', minimum 12" height, and lengths to provide depth as indicated.
4. Top Section: 4-foot – 2-inch x 3-foot – 2.25-inch outside dimensions, and inside dimensions 2'- 0.25 inches x 3', and 7-inch wall thickness as specified on the CB-01 standard plan.
5. Joint Sealant: ASTM C 990, bitumen or butyl rubber.
6. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
7. Grout catch basin bottom smooth to slope 1" toward the center or flowline of the basin, with a continuous slope through the bottom flowline from the upstream

pipe to the downstream pipe. There shall be no standing water in the catch basin. Cleaning of the downstream pipes may be required to ensure no standing water in the new drainage system for a dry environment.

C. Modified CB-04 Precast Concrete Catch Basins:

1. Description: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.
2. Base Section: 4.5-inch minimum thickness for floor slab and 4.5-inch minimum thickness for walls and base riser section, and separate base slab or base section with integral floor.
3. Riser Sections: 4.5-inch minimum thickness, 24-inch x 24-inch inside dimensions, and lengths to provide depth as plans indicate, minimum 12" height.
4. Top Section: 24-inch x 24-inch inside dimensions, 2-foot – 9-inch square outside dimension as indicated on plans. LA DOTD Type "A" Cast Iron grate and frame to be inset inside top section.
5. Joint Sealant: ASTM C 990, bitumen or butyl rubber.
6. Grout catch basin bottom smooth to slope 1" toward the center or flowline of the basin, with a continuous slope through the bottom flowline from the upstream pipe to the downstream pipe. There shall be no standing water in the catch basin. Cleaning of the downstream pipes may be required to ensure no standing water in the new drainage system for a dry environment.

D. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section. Designed Precast Concrete Catch Basins: ASTM C 913, precast, reinforced concrete; designed according to ASTM C 890 for A-16 (ASSHTO HS20-44), heavy-traffic, structural loading; of depth, shape, and dimensions indicated, with provision for joint sealants.

1. Joint Sealants: ASTM C 990 (ASTM C 990M), bitumen or butyl rubber.
2. Pipe Connectors: ASTM C 923 (ASTM C 923M), resilient, of size required, for each pipe connecting to base section.
3. A concrete collar of 30% diameter thickness around the outside of the pipe 1 ft. in length shall be included after the pipe connection to the catch basin has been made. A hole for the new pipe, if not already provided by the precast supply, will be cored at 10% the diameter size and all the annular space between the pipe and the catch basin grouted smooth on the inside and out of the catch basin.

2.6 STORMWATER INLETS

A. Curb Inlets: Made with vertical curb opening of specified dimension on standard LADOTD catch basin details. Include heavy-duty (HS-20 minimum) frames and grates.

B. Gutter Inlets: Made with horizontal gutter opening specified dimension on standard LADOTD catch basin details. Include heavy-duty (HS-20 minimum) frames and grates.

C. Combination Inlets: Made with vertical curb and horizontal gutter openings specified dimension on standard LADOTD catch basin details. Include heavy-duty (HS-20 minimum) frames and grates.

D. Precast Concrete Headwall Inlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

E. Cast-In-Place Concrete Headwall Inlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

F. Precast Concrete Safety End Treatment Inlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

G. Cast-In-Place Concrete Safety End Treatment Inlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

2.7 STORMWATER OUTLETS

A. Precast Concrete Headwall Outlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

B. Cast-In-Place Concrete Headwall Outlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

C. Precast Concrete Safety End Treatment Outlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

D. Cast-In-Place Concrete Safety End Treatment Outlets: Made with opening for scheduled pipe size, with adequate annular space for grouting, on standard LADOTD headwall details.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavation, trenching, and backfilling are specified in Division 31 Section "Earth Moving."

3.2 PIPING INSTALLATION

A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and

arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

C. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

D. When installing pipe under streets or other obstructions that cannot be disturbed, use pipe-jacking process of microtunneling.

E. Pipe shall be installed with a continuous slope to allow for proper drainage. No sitting water will be allowed in any of the new pipes or catch basins. Cleaning of the downstream pipes may be required to ensure no standing water in the new drainage system for a dry environment.

F. Install gravity-flow, nonpressure drainage piping according to the following:

1. Install piping pitched down in direction of flow.
2. Install PVC drainage piping according to ASTM D 2321 and ASTM F 1668.
3. Install PVC profile gravity drainage piping according to ASTM D 2321 and ASTM F 1668.
4. Install reinforced-concrete drainage piping according to ASTM C 1479 and ACPA's "Concrete Pipe Installation Manual."

G. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches (minimum) each side of pipe or conduit.

H. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.

2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.

3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.

4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

J. Trench Bottoms: Excavate trenches 6 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

K. Pipe bedding to be per project drawing specification, or LADOTD standard plans if not specified. Bedding shall be installed and compacted before pipe is laid, then again compacted up to the pipe haunches after pipe installation.

1. Utilize LaDOTD Specification 610 crushed Limestone for backfill at trenches for piping, unless noted otherwise.

L. Pipe back fill shall be installed in 6” lifts of suitable fill and compacted after each lift. Should the pipe be intended to be located under pavement, the backfill under pavement and within 5’ of pavement shall be compacted to 95% standard proctor.

3.3 PIPE JOINT CONSTRUCTION

A. Pipe couplings, expansion joints, and deflection fittings with pressure ratings at least equal to piping rating may be used in applications unless otherwise indicated.

B. Join gravity-flow, nonpressure drainage piping according to the following:

1. Join PVC drain piping according to ASTM D 2321 and ASTM D 3034 for elastomeric-seal joints or ASTM D 3034 for elastomeric-gasketed joints.
2. Join PVC profile gravity drain piping according to ASTM D 2321 for elastomeric-seal joints or ASTM F 794 for gasketed joints.
3. Join fiberglass sewer piping according to ASTM D 3839 for elastomeric-seal joints.
4. Join reinforced-concrete drain piping according to ACPA's "Concrete Pipe Installation Manual" for rubber-gasketed joints.
5. Join dissimilar pipe materials with Fernco strongback coupling.

3.4 CONCRETE PLACEMENT

A. Place cast-in-place concrete in accordance with the requirements of ACI 318.

3.5 CONNECTIONS

A. Connect nonpressure, gravity-flow drainage piping in building's storm building drains specified in Division 22 Section "Facility Storm Drainage Piping."

B. Tie-in to existing storm drain system at existing catch basin, or install new catch basin for tie-in.

1. Tie-in to an existing catch basin by coring a hole no more than 10% greater in diameter than the pipe being inserted. The entire annular space should be grouted in with a smooth catch basin wall interior and exterior.

    a. Use concrete that will attain a minimum 28-day compressive strength of 3000 psi minimum unless otherwise indicated.
    b. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.

2. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.6 CLOSING ABANDONED STORM DRAINAGE SYSTEMS

A. Abandoned Piping: Close open ends of abandoned underground piping indicated to remain in place. Include closures strong enough to withstand hydrostatic pressures that result from flowable fill of the entire pipe.

1. Close open ends of the piping with at least 8-inch-thick, brick masonry bulkheads inserted inside the pipe to be abandoned leaving a gap at the top of the upstream end open for flowable fill insertion. All voids within the pipe to be abandoned shall be filled with flowable fill. Any flowable fill spillage into catch basins to remain, etc. shall be cleaned prior to the flowable setting.

B. Abandoned Manholes and Structures: Excavate around manholes and structures as required and use one procedure below:

1. Remove manhole or structure and close open ends of remaining piping.
2. Remove top of manhole or structure down to at least 6 inches below final grade. Fill to within 2 inches of top with stone, rubble, gravel, or compacted dirt. Fill to top with flowable fill.

C. Backfill to grade according to Division 31 Section "Sitework."

3.7 IDENTIFICATION

A. Materials and their installation are specified in Division 31 Section "Sitework." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.

1. Use warning tape or detectable warning tape over ferrous piping.
2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.8 FIELD QUALITY CONTROL

A. Inspect interior and exterior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches (610 mm) of backfill is in place, and again at completion of Project.

1. Submit separate reports for each system inspection.
2. Defects requiring correction include the following:

    a. Alignment: Less than full diameter of inside of pipe is visible between structures.
    b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
    c. Damage: Crushed, broken, chipped, punctured, cracked, or otherwise damaged piping.
    d. Infiltration: Water leakage into piping.
    e. Exfiltration: Water leakage from or around piping.

3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
4. Reinspect and repeat procedure until results are satisfactory.

B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.

1. Do not enclose, cover, or put into service before inspection and approval.
2. Test completed piping systems according to requirements of authorities having jurisdiction.
3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
4. Submit separate report for each test.
5. Gravity-Flow Storm Drainage Piping: Test according to requirements of authorities having jurisdiction, UNI-B-6, and the following:

    a. Exception: Piping with soil-tight joints unless required by authorities having jurisdiction.
    b. Option: Test plastic piping according to ASTM F 1417.
    c. Option: Test concrete piping according to ASTM C 924 (ASTM C 924M).

C. Leaks and loss in test pressure constitute defects that must be repaired.

D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

3.9 CLEANING

A. Clean interior of piping and catch basins free of dirt and superfluous materials. Flush with water.

B. Visually inspect piping to ensure dirt and debris has been completely removed.

END OF SECTION 334100