

Florida A&M University

Ware-Rhaney Complex Gear Replacement Tallahassee, FL



Florida A&M Board of Trustees

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Statement of Compliance:

To the best of my knowledge, these drawings and the project manual are complete and comply with the Florida Building Code.

Date: March 29, 2024
Bid Documents

4452 Clinton Street
Marianna, FL 32446
FL Certificate of Authorization: 27825
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SECTION 00100 - INSTRUCTIONS TO BIDDERS

PART 1 - INSTRUCTIONS TO BIDDERS

- A. The "Instructions to Bidders" of the American Institute of Architects, AIA Document A701, 1997 Edition are an integral part of the Specifications, as if written in full herein.
- B. Copies of the "Instructions to Bidders" are on file and may be examined in the office of the Architect, or may be purchased from the Florida Association of the American Institute of Architects, Document Dept., P.O. Box 103, Tallahassee, FL 32302
- C. The Contractor is hereby specifically directed, as a condition of the contract, to obtain the necessary number of copies of Document A701 so as to acquaint himself with the Articles contained therein and to notify and appraise all Subcontractors, Suppliers and any other parties of the Contract or individuals or agencies engaged in the work as to its contents.
- D. No contractual adjustments shall be due or become exigent as a result of, or failure on the part of the Contractor to fully acquaint himself and all other parties to the contract with the conditions of Document A701.

PART 2 - SUPPLEMENTARY CONDITIONS

- A. Clarifications, modifications and additions to the Standard Instructions to Bidders are included in Section 00200 - Supplementary Instructions to Bidders of these Specifications.

END OF SECTION 00100

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SECTION 00200 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

- A. Supplements modify, change, delete from or add to the "Instructions to Bidders, AIA Document A701, 1997 Edition. Where any article of the Instructions to Bidders is modified or any Paragraph, Subparagraph or Clause is modified or deleted by these Supplements, the unaltered provisions of that Article, Paragraph, Subparagraph or clause shall remain in effect.

PART 2 - RECEIPT OF BIDS

- A. Florida A&M University will receive lump sum bids to perform all work associated with the Foster-Tanner Complex Electrical Gear Replacement for Florida A&M University, Tallahassee, Fl. **Bids to be submitted on bid form.**
- B. Bids shall be received **until p.m. local time, , 2024.**
- C. Submit Bids To: **Florida A&M University
Facilities Planning Construction and Safety
2400 Wahnish Way, Suite 100
Tallahassee, Fl 32307**
- D. Sealed bids shall be received until the above noted time and date for a "Lump Sum" Contract, based on the provisions of the Drawings and Project Manual as furnished by

PART 3 - COPIES OF BIDDING DOCUMENTS

3.1 SETS OF PLANS AND SPECS

- A. General Contractors and Subcontractors may obtain two complete sets of plans and specifications in electronic format only. No hard copies to be furnished.

3.2 SHIPPING AND HANDLING CHARGES

- A. All shipping charges for delivery and return shall be borne by the party requesting documents.

3.3 REQUESTS FOR DRAWINGS AND SPECIFICATIONS

- A. Requests for Specifications and Drawings at the above stated prices should be made to Watford Engineering, Inc.

3.4 EXAMINATION OF DOCUMENTS

- A. Construction Documents may be examined at the Architect's office.

PART 4 - INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

4.1 NOTIFICATION OF ERROR

- A. Bidders and Subcontractors 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.

4.2 FAILURE TO BE FULLY INFORMED

- A. No claim for additional compensation shall be entertained on behalf of or paid to General Contractor or any Subcontractor on account of his/her failure to be fully informed of all requirements of all parts of the Specifications, Addenda or Drawings. They are part of the Contract Documents and of the Contract and all Bidders should be thoroughly familiar with the content and requirements before submitting proposals.

PART 5 - PROPOSAL

5.1 GENERAL

- A. SUBMIT PROPOSAL IN THE SAME FORM AS FOUND IN SECTION 00300, BID FORM.
- B. The form may be removed from the specifications or typed as the Bidder so desires. Complete the form without interlineation, alteration or erasure. Amounts must be in both words and figures, with the Bidder's name fully stated; signature in longhand, executed by principal authorized to make contracts. When complete, proposal shall be placed in a sealed envelope, along with bid bond, sealed and labeled "BID DOCUMENTS".
- C. Bids may be retained by the Owner for a period not to exceed sixty days from the time of opening of bids.

PART 6 - BID SECURITY

6.1 NOT REQUIRED

PART 7 - WITHDRAWAL OF BID

7.1 GENERAL

- A. All bids shall be held valid for a period of sixty days after receipt of bids.

PART 8 - SUBCONTRACTOR LISTING

8.1 GENERAL

- A. Subcontractor to be employed for parts of the Work, as requested in the Bid Form, Section 00300, shall be listed. This requirement is mandatory. The competency and responsibility of listed subcontractors shall be considered in making the award of the Contract.
- B. Prior to the award of the Contract, the Architect shall notify the Bidder in writing if either the Owner or the Architect, after due investigation, has reasonable objection to any such proposed Subcontractor. If the Owner or Architect has reasonable objection to any such proposed Subcontractor, the Bidder may, at his option, (1) withdraw his bid, or (2) submit an acceptable substitute Subcontractor.
- C. Subcontractors proposed by the Bidder and to whom the Owner and the Architect have made no reasonable objection under the provisions of Paragraph 8.01-B. shall be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and the Architect.

PART 9 - OPENING OF BIDS

9.1 GENERAL

- A. The properly identified Bids received on time shall be opened publicly and shall be read aloud in the Florida A&M University Facilities Planning & Construction Meeting Room, 2400 Wahnish Way, Conference Room 124, Tallahassee, FL 32307...

PART 10 - CONTRACTOR'S QUALIFICATION STATEMENT

10.1 GENERAL

- A. In lieu of AIA Document A305, Contractor's Qualification Statement, the Contractor's Resume Statement which is part of the Bid Form shall be submitted (see Section 00300).

PART 11 - FAMILIARITY WITH LAWS

11.1 GENERAL

- A. The Bidder is required to be familiar with all Federal, State and Local laws, ordinances, rules and regulations that in any manner affect the work. Ignorance on the part of the Bidder shall in no way relieve him from responsibility.

PART 12 - BOND REQUIREMENTS

12.1 GENERAL

- A. Prior to execution of the Contract, the Bidder shall furnish bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder in such form and amount as stated hereafter. Bonds may be secured through the Bidder's usual sources.
- B. To be acceptable to the Florida A&M University as Surety for Bid Bonds and Performance and Payment Bonds a Surety Company shall comply with the following provisions:
1. The Surety Company must be admitted to do business in the State of Florida.
 2. The Surety Company shall have been in business and have record of successful continuous operations for at least five (5) years.

The Surety Company shall have at least the following minimum ratings:

CONTRACT AMOUNT	POLICYHOLDER'S FINANCIAL	REQUIRED RATING	RATING CLASS
Performance Bond equal to 100% of Contract Price		A- or better	III

4. Best's Policyholder's Rating of "A-" and "B" (which signifies A- = Excellent, and B = Good, based upon good underwriting, economic management, adequate reserves for undisclosed liabilities, net resources for unusual stock and sound investment) or an equivalent rating from the Insurance commissioner if not rated by Best's.
5. The Surety Company shall not expose itself to any loss on any one risk in an amount exceeding ten percent (10%) of its surplus policyholders, provided:
 - a. Any risk or portion of any risk shall have been reinsured (in which case these minimum requirements contained herein also apply to the reinsuring carrier) in assuming insurer authorized or approved by the Insurance Commissioner to do business in this State shall be deducted in determining the limitation of risk prescribed in this section.

- b. In the case of a surety insurance company, there shall be deducted in addition to the deduction for reinsurance, the amount assumed by any co-surety.

END OF SECTION 00200

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SECTION 00300 - BID FORM

DATE: _____

BIDDERS NAME: _____

STREET AND CITY: _____

TELEPHONE NO: _____

TO: Florida A&M University
Facilities Planning Construction and Safety
2400 Wahnish Way, Suite 100
Tallahassee, FL 32307

Gentlemen:

The bidder, in compliance with your Advertisement for Bids for the **Ware-Rhaney Complex Electrical Gear Replacement, Tallahassee, FL** and having carefully examined the Project Drawings, the Project Manual and the site of the proposed work, and being familiar with conditions existing including availability of materials, proposes to furnish all labor, materials and equipment to construct the project in accordance with the Contract Documents, and the time indicated, at the price stated below. These prices shall cover all expenses incurred in performing the work required by the Contract Documents.

Drawings dated **March 29, 2024** are as listed in the Index of Drawings on Sheet No. 1 of the Drawings.

Specifications dated **March 29, 2024** are as listed in the Index of Specifications at the front of the Project Manual.

Also examined were the Contract provisions, the Site Work and the conditions affecting the Work and Addenda including,

Addendum No.:_____; Dated:_____ ; Pages ___ of ___.

Addendum No.:_____; Dated:_____ ; Pages ___ of ___.

Addendum No.:_____; Dated:_____ ; Pages ___ of ___.

Addendum No.:_____; Dated:_____ ; Pages ___ of ___.

Addendum No.:_____; Dated:_____ ; Pages ___ of ___.

In submitting this bid I agree:

1. To hold my bid open for 60 days after the bid date.
2. To accept the provisions of the Standard Contract documents of the Owner regarding disposition of bid security.
3. To enter into and execute a contract, if awarded, on the basis of this bid and to furnish Bonds in accordance with Specification Section 00500, and the General Conditions of the Contract for Construction.
4. To accomplish the work in accordance with the Contract Documents.
5. TIME OF COMPLETION: The Undersigned hereby affirms and states that, if awarded the Contract for said Work, he shall commence Work at the site immediately after receiving Notice-to-Proceed and shall completely perform the entire Contract within 120 consecutive calendar days to the date of Substantial Completion, subject to equipment availability.
6. LIQUIDATED DAMAGES: The Contractor shall pay as liquidated damages (not as a penalty) the sum of \$500.00 for each consecutive calendar day elapsing between date fixed by Contract for Substantial Completion and date such Substantial Completion has been fully accomplished. Liquidated damages shall also be incurred at \$500.00 each day upon Contractors failure to obtain Final Completion certification within 30 days of Substantial Completion date.

I, the Undersigned, hereby submit the following proposal:

7. BASE BID

I shall furnish all labor, materials, services and incidentals, and perform all Work necessary for the completion of the Ware-Rhane Complex Electrical Gear Replacement for the Florida A&M University as shown and specified in strict accordance with the above-named Contract Documents for the sums and prices as listed below:

\$ _____

(_____ DOLLARS)
(Amount shall be shown in both numerals and words. Amount in words shall govern.)

8. UNIT PRICES: not used
9. ALTERNATES: None
10. CONSTRUCTION PROGRESS SCHEDULE: The Undersigned hereby agrees that if awarded the Contract he shall submit a Daily Progress Schedule within

fifteen (15) consecutive calendar days following notification of Contract award.
(See Section 01160, Progress Schedule.)

- 11. CONTRACT PROVISIONS: I understand that the Owner reserves the right to reject any or all bids and to waive any irregularities in the bidding.
- 12. Upon receipt of written notice of the acceptance of this bid, Bidder shall execute the formal contract within ten (10) days and deliver a Surety Bond or Bonds as required by Invitation to Bid.
- 13. I have executed and attached the following:
 - a. Sworn Statement Under Section 287.133(3)(A), Florida Statutes, on Public Entity Crimes.
 - b. Contractor's Resume Statement.
 - c. Sworn Statement on Drug-Free Workplace Program.
 - d. Sworn statement on Material Safety Data Form (MSDF).

COMPANY

DATE BY (SIGNATURE)

TITLE

(SEAL - IF BID IS BY
CORPORATION)

STATE OF _____

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

[name of individual signing]

who, after first being sworn by me, affixed his/her signature in the space provided above
on

this _____ day of _____, 2024.

_____ SEAL

Ware-Rhaney Complex Electrical Gear
Replacement – Tallahassee, FL

March 29, 2024
2023-085

NOTARY PUBLIC

My commission expires: _____

**SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA
STATUTES, ON PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY
PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to.....
[print name of the public entity]

by _____
[print individual's name and title]

for _____
[print name of entity submitting sworn statement]

whose business address is

and (if applicable) its Federal Employer Identification Number (FEIN) is

(If the entity has no FEIN, include the Social Security Number of the individual
signing this sworn statement: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
 1. A predecessor or successor of a person convicted of a public entity crime;
 - or

2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
5. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. [Indicate which statement applies.]

_____ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. [attach a copy of the final order]

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

[signature]

STATE OF _____

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

[name of individual signing]

who, after first being sworn by me, affixed his/her signature in the space provided above on

this _____ day of _____, 2024.

NOTARY PUBLIC

SEAL

My commission expires:

END OF SWORN STATEMENT ON PUBLIC ENTITY CRIMES

**SWORN STATEMENT PURSUANT TO SECTION 287.087 AND 440.102,
FLORIDA STATUTES, DRUG-FREE WORK PLACE PROGRAM**

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A
NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to _____

by _____
(print individual's name and title)

for _____
(print name of entity submitting sworn statement)

whose business address is

and (if applicable) its Federal Employer Identification Number (FEIN) is

_____.

2. It is my understanding that the Owner, Jackson County School Board is encouraged by State Law to give preference to entities with DRUG-FREE WORK PLACE PROGRAMS authorized by Florida Statutes, Section 287.087 and that the entity is eligible for discounts to its Worker's Compensation Insurance Premiums under Florida Statute Section 440.102.

(signature)

STATE OF _____

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

[name of individual signing]

who, after first being sworn by me, affixed his/her signature in the space provided above on this _____ day of _____, 2024.

NOTARY PUBLIC

SEAL

My commission expires:

END OF DRUG-FREE WORK PLACE PROGRAM STATEMENT

**SWORN STATEMENT PURSUANT TO FLORIDA STATUTES, MATERIAL SAFETY
DATA FORM (MSDF)**

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY
PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to _____

by _____
(print individual's name and title)

for _____
(print name of entity submitting sworn statement)

whose business address is

and (if applicable) its Federal Employer Identification Number (FEIN) is

_____.

- 2 It is my understanding that the Owner, Jackson County School Board (JCSB), requires the Bidder to submit to the Owner within five (5) business days from Bid Date the following items:
- a. List of all chemicals and/or products that may emit, leak, evaporate, be dissolved from, or produced by the services that the Contractor is proposing;
 - b. List shall include a clear deliberation of chemical content of product, containing all information required by Federal OSHA Hazard Construction Law and Florida's Right-to-Know Law; list shall have Bid number and Bid Item Number stated on Data Sheets.
 - c. For building or construction materials, or building furnishings, the Contractor shall submit in writing any chemical emission or exposure data that the product contains.
 - d. Safety and Health Precautions to be employed to protect Workers who will be doing the work;
 - e. Safety and Health Precautions to be employed to protect the building occupants, general public and other nearby tradesmen;

- f. Safety and Health precautions to ensure that the work space, building, or School Board's properties are not contaminated as it may relate in any way to the services that are provided;
 - g. Precautions to be employed to ensure that harmful exposures shall not occur after the services have been provided, and a detailed description of the steps to be used to ensure this condition is achieved;
 - h. Procedures for the disposal of wastes or by-products, and a statement that the Contractor shall dispose of all wastes in compliance with applicable regulatory agencies.
3. Contractor is projecting himself as an expert in these services, and as such should be very familiar with listed items (a) through (h); As a knowledgeable entity about these services and products, the Contractor shall also be held fully and solely responsible for any problems that result in injury, illness, property damage or loss, or contamination of the air, soil, or water, or fines imposed by any regulatory agency for failure to comply with the regulations or prudent actions, that result from his services and/or the products used in supplying these services.
4. Submission of the Bid acknowledges and accepts the agreement to provide these services or materials and the Contractor agrees with all of the provisions listed above, and agrees to fully indemnify the WCSB for any and all costs to the WCSB that are the result of contamination, people exposures, damage to WCSB, Architect, and all personal property, or regulatory actions.
5. Contractor understands and agrees, if any of these provisions are not agreed to or provided as required in the Bid Application, the Contractor may be disqualified on the basis of being unresponsive to the Bid Requirements.
6. If after the contract has been secured, the Contractor fails to comply with any of these provisions, the work may be stopped immediately by the WCSB, and the contract may be terminated at no penalty to the WCSB. Should this occur, then the difference between this bid price and that of the next highest bidder shall be withheld as punitive damages for failing to comply with this agreement. The intent of this provision is for the Contractor to provide services and materials that shall not cause any harm to the students, staff, faculty, other tradesmen, school visitors or business invites, the indoor or outdoor environments, Jackson County School Board property, or neighboring properties, and to ensure that the Bidder complies fully with all applicable regulatory agency requirements.
7. The JCSB reserves the right to request additional information from the Contractor and Supplier concerning the contents of the products submitted by the Contractor for the corresponding bid item.

8. All questions concerning the requirements shall be submitted in writing to be forwarded to the Jackson County School Board.

(signature)

STATE OF _____

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

[name of individual signing]

who, after first being sworn by me, affixed his/her signature in the space provided above on

this _____ day of _____, 2024.

NOTARY PUBLIC

SEAL

My commission expires:

END OF MATERIAL SAFETY DATA FORM (MSDF) STATEMENT

END OF BID FORM

SECTION 00500 - AGREEMENT FORM AND BOND REQUIREMENTS

AGREEMENT FORM

The form of Contract shall be the Standard Form of Agreement Between Owner and Contractor, issued by the American Institute of Architects, AIA Document A101 (Stipulated Sum) - 1997 Edition.

BOND REQUIREMENTS

Unless otherwise specified or instructed, all bonds shall be paid for by Contractor and made payable to the Owner. AIA Document A311, February 1970 Edition, shall be used.

BID BOND

See Project Manual Section 00200, Supplementary Instructions to Bidders, Part 6, Bid Security, for requirements of Bid Bond.

PERFORMANCE BOND

Performance Bond equal to one hundred percent (100%) of Contract price shall be required, plus any alternates. AIA Document A311, February 1970 Edition, shall be used.

END OF SECTION 00500

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SECTION 00800 - GENERAL CONDITIONS

PART 1 - STANDARD GENERAL CONDITIONS

- A. The "General Conditions of the Contract for Construction" of the American Institute of Architects, AIA Document No. A201, Fourteenth Edition (1987), are an integral part of the Specifications as if written in full herein.
- B. Copies of the "General Conditions" are on file and may be examined in the office of the Engineer, or may be purchased from the Florida Association, The American Institute of Architects, Document Department, P.O. Box 10388, Tallahassee, Florida, 32302.
- C. The Contractor is hereby specifically directed, as a condition of the Contract, to obtain the necessary number of copies of Document A201, to acquaint himself with the Articles contained therein and to notify and appraise all Subcontractors, Suppliers and any other parties of the Contract or individuals or agencies engaged in the work as to its contents.
- D. No contractual adjustments shall be due or become exigent as a result of, or failure on the part of the Contractor to fully acquaint himself and all other parties to the contract with the conditions of Document A201.

PART 2 - SUPPLEMENTARY CONDITIONS

- A. Clarifications, modifications and additions to the Standard General Conditions are included in Section 00900 - Supplementary General Conditions of these Specifications.

END OF SECTION 00800

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SECTION 00900 - SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL

1.1 GENERAL

A. Supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction", AIA Document A201, Fifteenth Edition (1997). 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.

1.2 DEFINITIONS

A. Add the following Subparagraphs:

1.1.8 The "Owner" is: **Florida A&M University Facilities Planning Construction and Safety, 2400 Wahnish Way, Suite 100, Tallahassee, FL 32307**

1.1.9 The "Architect" is the Engineer: Watford Engineering

1.1.10 The word "product" as used in the Contract Documents includes materials, systems and equipment.

1.1.11 The word "Specifications" refers to and indicates descriptions, provisions and requirements contained herein, together with all written agreements made or to be made, pertaining to method and manner of performing work, or to quantities and qualities of materials to be furnished under Contract.

1.1.12 The word "Drawings" refers to and indicates all drawings or reproductions of drawings pertaining to construction of work contemplated, and its appurtenances.

1.3 INTENT

A. In case of conflicting or duplicate requirements the more stringent requirement shall govern.

PART 2 - OWNER

2.1 GENERAL

A. Delete Paragraph 2.1.2.

2.02 INFORMATION AND SERVICES REQUIRED OF THE OWNER

- A. Delete Paragraphs 2.2.1, 2.2.3 AND 2.2.5.
- B. Contractor shall be furnished, free of charge, ten sets of drawings and project manuals/specifications.

PART 3 - CONTRACTOR

3.1 CONTRACT ADJUSTMENTS

- A. No contractual adjustments shall be due or become exigent as a result of, or failure on the part of the Contractor to fully acquaint himself and all other parties to the contract with the General Conditions, Section 00800.

3.2 FIELD CONDITIONS

- A. Prior to commencing any excavation or grading, the Contractor shall satisfy himself as to the accuracy of all survey data as indicated in these drawings and specifications and/or as provided by Owner. Should the Contractor discover any inaccuracies, errors or omissions in the survey data, the Contractor shall immediately notify the Architect in order that proper adjustments can be anticipated and ordered. Commencement by the contractor of any excavation or grading shall be held as an acceptance of the survey data by the Contractor, after which time the Contractor has no claim against the Owner resulting from alleged errors, omissions or inaccuracies of the said survey data.

3.3 SCHEDULE OF MATERIAL AND SUBDIVISION OF THE WORK

- A. Contractor shall, within fifteen (15) days after signing of Contract, file with the Architect, a correct, complete itemized schedule of materials and subdivisions of work, giving quantities and unit prices of complete labor and materials.

3.4 CONTRACT DOCUMENTS

- A. If, in Contractor's opinion, any work is indicated on Drawings, or is specified in such a manner as will make it impossible to produce a generally acceptable piece of work, or should discrepancies appear between drawings and specifications, he shall refer same to Architect for decision before proceeding with Work.
- B. If Contractor fails to make such reference, no excuse will thereafter be entertained for failure to carry out work in satisfactory manner. Should a conflict occur in or between Drawings or Specifications, Contractor shall be deemed to have estimated on a more expensive way of doing work unless he shall have asked for and obtained a decision, in writing, from Architect before submission of proposal as to which method or materials will be required.

- C. Figures govern scale dimensions and large scale drawings govern those of smaller scale. If drawings and specifications conflict or require any clarification which was not obtained prior to bidding, the Contractor shall estimate and include in his bid the more expensive method or material. No deviation shall be made from plans and specifications except upon written order of the Architect.

3.5 SUPERVISION AND CONSTRUCTION PROCEDURES

- A. Contractor shall be responsible for notifying the Owner's Uniform Building Code Inspector (UBCI) for the School District. The Contractor shall notify the UBCI when the following areas or segments of work are ready for inspection by the UBCI. The Contractor shall not conceal or cover up these areas until the UBCI has completed their inspection of same:
- Pre-Construction Meeting
 - Electrical Conduit, Wiring and Equipment
 - Substantial Completion Inspection of Project
 - Final Completion Inspection of Project
- B. The Contractor shall supervise and direct the Work, using his best skill and attention. The Contractor shall be solely responsible for and have control over all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.
- C. 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 performing portions of the Work under a contract with the Owner.
- D. 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 other than the Contractor.
- E. The Contractor shall be responsible for inspection of portions of Work already performed under his Contract to determine that such portions are in proper condition to receive subsequent Work.

3.6 WARRANTY

- A. The warranty provided in this paragraph shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents.

- B. The Contractor shall provide the Owner with written warranties covering the work for the periods of time specified in the Contract Documents. As a minimum the work will be guaranteed against defects in materials and workmanship for one year from the date of final acceptance of the project by the Owner with all mechanical equipment compressors guaranteed for five years from the date of final acceptance. The date of final acceptance shall be the beginning date of all warranties (see Article 9.8.4).

3.7 PERMITS, FEES AND NOTICES

- A. All construction work shall comply with the Florida Department of Education Office of Educational Facilities State Requirements for Educational Facilities, latest edition. All educational facilities constructed by the Jackson County School Board shall be exempt from all county, district, municipal, or local building codes and ordinances, and the Board may not use local building codes and ordinances, even on a volunteer basis. No School Board funds may be expended for obtaining building permits. The Uniform Building Code for Educational Facilities Construction required by Chapter 74-374, Florida Laws, governs in this instance. All educational facilities in the State of Florida constructed by a Board shall incorporate the State Uniform Code for Public Educational Facilities Construction and are exempt from all other State, County, District, Municipal or Local Building Codes, interpretations, building permits and assessments of fees for Building Permits, Ordinances and impact fees or service availability fees. (State Requirements for Educational Facilities - 5.1 Codes and Regulatory Agencies).
- B. Although the Owner is not subject to the Florida Sales and Use Tax, any Contractor who purchases materials which will be used in the construction of a public-owned building will not be exempt from the sales tax on these materials as evidences by the following excerpt from the Florida Statutes:
1. The State, any county, municipality or political subdivision of this state is exempt from the sales tax, except this exemption shall not include sales or tangible personal property made to Contractors employed either directly or as agents of such government or political subdivision thereof when such tangible personal property going into or becomes a part of public works owned by such government or political subdivision thereof.
- C. The Contractor shall meet the latest requirements of the United States Department of Labor Occupational Safety and Health Standards and comply with The Manual of Accident Prevention in Construction, all applicable safety and sanitary laws, regulations, and ordinances and any safety rules or procedures.
- D. The National Emission Standards for Hazardous Air Pollutants (NESHAPS), 40 CFR part 61, Subpart M and other guidance materials relating to asbestos regulations and as follows shall be the responsibility of the Contractor:

1. Demolition and Renovation Projects: In accordance with asbestos regulations, subpart M, a notification must be sent to the Department of Environmental Regulation before the project starts. A notice must be sent for a DEMOLITION project even if NO asbestos containing material is present in the facility.
2. Upon approval of Contract by the Owner and ten (10) days before the issuance of Notice-to-Proceed of demolition project, the notice must be postmarked or delivered to BOTH of the following addresses as well as the Owner and Architect:

1) State of Florida
Department of Environmental Protection

160 Governmental Center
Management
Second Floor
Pensacola, FL 32501
(850) 436-8364

2) State of Florida
Department of Environmental
Protection
Bureau of Air Quality

2600 Blairstone Road
Tallahassee, FL 32399-2400

Any questions concerning the asbestos regulations shall be addressed to DEP.

3.8 ASBESTOS CONTAINING MATERIALS

- A. **No asbestos anticipated in areas of construction. In addition, due to the nature and extent of construction, if asbestos were present no asbestos should be disturbed.**
- B. Contractor shall maintain safe conditions by:
 1. Avoiding disturbance of ACM, accidental or intentional.
 2. Reporting all suspicious hazardous conditions to the Engineer and the Owner.

3.9 SUPERINTENDENT

- A. 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 performing portions of the Work under a contract with the Contractor.
- B. The Contractor shall employ and keep at the site of the work during its progress a competent and thoroughly experienced superintendent capable of handling all phases of the project. The Superintendent shall have any necessary assistants, foremen and timekeepers required by the scope of this project. If the Contractor must replace the Superintendent for any reason

between "Notice-to-Proceed" and final Architect's certification of completion of the work, (punch list) the Contractor shall notify Architect of the date that the existing Superintendent shall be leaving. All work shall cease after said date until the Architect accepts the reason for replacement and approves of a satisfactory replacement Superintendent and the Architect is satisfied the new Superintendent is properly authorized and briefed on the status of the project.

- C. The Contractor shall submit to the Architect the name of the proposed superintendent for the Contractor at the Pre-Construction Conference. The superintendent shall attend the Pre-Construction Conference and all Progress Meetings.
- D. The Superintendent will remain on the job until punch list items are corrected.
- E. The Contractor shall give efficient supervision to the work, using the best skill and attention. The Contractor shall carefully study and compare all drawings, specifications and other instructions and shall report at once to the Architect any error, inconsistency or omission which is discovered but shall not be held responsible for their existence or discovery. The Superintendent shall be in attendance on the job a minimum of six (6) hours per working day from "Notice-to-Proceed" continuously through final approval of the work by the Architect. No work shall be allowed to transpire on the site unless the Superintendent is in attendance at the site.

3.10 WORK FORCE

- A. The Contractor shall furnish sufficient forces, construction plant and equipment, and shall work such hours, including night shifts and overtime operations, as may be necessary to insure the prosecution of the Work in accordance with the approved progress schedule. If the Contractor falls behind the progress schedule, the Contractor shall take such steps as may be necessary to improve the progress by increasing the number of shifts, overtime operations, days of work and the amount of construction plant, all without additional cost to the Owner.
- B. Failure of the Contractor to comply with the requirements under this provision shall be grounds for determination by the Architect that the Contractor is not prosecuting the work with such diligence as will insure completion within the time specified and such failure constitutes a substantial violation of the conditions of the Agreement.
- C. Upon such determination, the Owner may terminate the Contractor's right to proceed with the work, or any separable part thereof, in accordance with Article 14 of the General Conditions, or may withhold further payments as indicated in Article 9.5.1.

3.11 SPECIAL JOB CONDITIONS

- A. Florida A&M University policy states that there shall be no smoking or use of tobacco products allowed in any facility or on any real or personal property owned by or under the control of the Florida A&M University. Contractor and Subcontractor employees are required to leave the school campus for tobacco use.
- B. The General Contractor and/or subcontractor and their employees shall refrain from use of vulgarities around students, staff and faculty.
- C. Clothing shall have no vulgarities or sexually suggestive graphics.
- D. Direct contact with students, faculty or staff is strictly prohibited.
- E. Violation of Special Conditions may result in immediate termination of that employee, Contractor or Subcontractor.
- F. **JESSICA LUNSFORD ACT:**

The successful contractor will be required to comply with the State of Florida Jessica Lunsford Act. This Act will require a “Level Two Clearance Background Check” and fingerprinting for all workers who will be on the school campus. It is suggested that the bidder contact the Jackson County School Board for information prior to bidding.

3.12 SHOP DRAWINGS, PROJECT DATA AND SAMPLES

- A. The Contractor shall review, stamp with his approval and submit, with reasonable promptness and in orderly sequence so as to cause no delay in the Work or in the Work of any other Contract, all Shop Drawings, Product Data, and Samples required by the Contract Documents or subsequently by the Architect as covered by Modifications. Shop Drawings and Samples shall be properly identified as specified, or as the Architect may require. At the time of submission the Contractor shall inform the Architect in writing of any deviation in the Shop Drawings from the requirements of the Contract Documents.
- B. The Architect will review and approve Shop Drawings and Samples with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The Architect's approval of a separate item shall not indicate approval of an assembly in which the item functions.
- C. The Contractor shall make any corrections required by the Architect and shall resubmit the required number of corrected copies of Shop Drawings or new Samples until approved. The Contractor shall direct specific attention in

writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Architect on previous submissions.

- D. When professional certification of performance criteria of materials, systems or equipment is required by the contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

3.13 USE OF SITE

- A. The Contractor shall present a plan, for approval by the Architect and Owner, showing all areas for safety fencing staging, storage, job office, ingress and egress to the site. No work shall be done until this is approved.

3.14 CLEANING UP

- A. The Contractor shall clean all glass surfaces and leave the Work "clean" to include, where applicable, properly finished and polished floors.
- B. If the contractor fails to clean up, the Owner may do so and the cost thereof shall be charged to the Contract as provided in Paragraph 6.3.

3.15 INDEMNIFICATION

- A. Contractor hereby acknowledges the receipt of ten dollars (\$10.00) and other good and valuable consideration from the Owner and the Architect which has been paid to him as specific consideration for the indemnification provided herein.

PART 4 - ADMINISTRATION OF CONTRACT

4.1 ARCHITECT

- A. Nothing contained in the Contract Documents shall create any contractual relationship between the Architect and the Contractor.
- B. The Architect will not be responsible for the acts or omissions of the Contractor, and Subcontractors, or any of their agents or employees, or any other persons performing any of the Work.

4.2 MEDIATION

- A. Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Subparagraphs 4.3.10, 9.10.4 and 9.10.5 shall, after initial decision by the Architect or 30 days after submission of the Claim to the Architect, be subject to mediation as a

condition precedent to arbitration or the institution of legal or equitable proceedings by either party.

- B. The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable 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.
- C. 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.

PART 5 - SUBCONTRACTORS

5.1 CONTRACTUAL RELATIONS

- A. Nothing contained in the Contract Documents shall create any contractual relation between the Owner or the Architect and any Subcontractor or Sub-subcontractor.
- B. All work performed for the Contractor by a Subcontractor shall be pursuant to an appropriate agreement between the Contractor and the subcontractor (and where appropriate between Subcontractors and Sub-subcontractors) which shall contain provisions that:
 - 1. Preserve and protect the rights of the Owner and the Architect under the Contract with respect to the Work to be performed under the subcontract so that the subcontracting thereof will not prejudice such rights;
 - 2. Require that such Work be performed in accordance with the requirements of the Contract Documents;
 - 3. Require submission to the Contractor of applications for payment under each subcontract to which the Contractor is a party, in reasonable time to enable the Contractor to apply for payment in accordance with Article 9;
 - 4. Require that all claims for additional costs, extensions of time, damages for delays or otherwise with respect to subcontracted portions of the Work shall be submitted to the Contractor (via any Subcontractor or Sub-subcontractor where appropriate) in the manner provided in the Contract Documents for like claims by the Contractor upon the Owner;

5. Waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by the property insurance described in Article 11, except such rights as they may have to the proceeds of such insurance held by the Owner as trustee under Article 11; and,
6. Obligate each Subcontractor specifically to consent to the provisions of this Paragraph 5.1.

PART 6 - CHANGES IN THE WORK

6.1 CHANGE ORDERS

- A. The Contract Sum and the Contract Time may be changed only by a Change Order.
- B. When any one change increases or decreases the scope of the original contract, the proposal to change shall be supported by accurate cost data establishing the fair and current market value of the labor, materials, equipment, and incidentals required to accomplish the change, plus a margin to represent the contractor's profit and overhead. Cost data shall be in sufficient detail to enable any qualified architect or engineer to confirm the accuracy of such proposal. Profit and overhead shall be added to additive change orders and shall be deducted on deductive change orders. No deduction shall be made for profit and overhead on deductive change orders in connection with Direct Material Purchases – coordinate with Owner for Direct Materials Purchasing.
- C. The allowance for overhead and profit combined, included in the total cost to the Owner, shall be based upon the following schedule:
 1. For the Contractor, for any work performed by his own forces, 15% of the cost.
 2. For each Subcontractor involved, work performed by his own forces, 15% of the Cost.
 3. For the Contractor, for work performed by his Subcontractor, 5% of the amount due the Subcontractor.
- D. Cost shall be limited to the following: Cost of materials, including sales tax and cost of delivery, cost of labor, including Social Security, Old Age and Unemployment Insurance; Worker's Compensation Insurance; rental value of power tools and equipment. Overhead shall include the following: Bond premiums, supervision, superintendence, wages of timekeepers, watchmen and clerks, small tools, incidentals, general office expense and all other expenses not included in "cost". If the net value of a change results in a credit from the Contractor or Subcontractor, the credit given shall be the net cost plus overhead and profit except for Direct Material Purchase items. The cost as used herein shall include all items of labor, materials and equipment.

- E. The Contractor shall not be entitled to any claim for damages or cost including loss of profits, loss of use, overhead expenses, equipment rental, etc. on account of hindrances or delays from any cause whatsoever. If the hindrance or delay is caused by any act of God, or by any act or omission on the part of the Owner, Owner's agents, or governmental agencies having jurisdiction, such act, hindrance, or delay may entitle the Contractor to an extension of time only in which to complete the work which shall be determined by the Architect and approved by the Board, provided that the Contractor will give written notice as provided herein of the cause of such act, hindrance, or delay.
- F. Should concealed conditions encountered in the performance of the work below the surface of the ground be at variance with the conditions indicated by the Contract Documents or should unknown physical conditions below the surface of the ground of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract, be encountered, the Contract Sum shall be equitable adjusted by Change Order upon claim by either party made within five days after the first observance of the conditions.

PART 7 - TIME

7.1 DEFINITIONS

- A. The date of commencement of the Work is the date established in a Notice to Proceed. If there is no Notice to Proceed, it shall be the date of the Agreement.
- B. The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Architect when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the Work, or designated portion thereof, for the use for which it is intended without any further interference by the Contractor's work. The Architect shall provide the Owner with written certification that the work is substantially complete and ready for occupancy and establish an effective date; said certification to be provided on the effective date.
- C. The Date of Final Acceptance of the Work is the date certified by the Architect when construction is complete in accordance with the Contract Documents. Final Acceptance of the work shall not be accomplished until after the Contractor has completed all work required by the Contract Documents to include correction of all punch list items contained in punch lists prepared by the Architect and/or the Owner. Architect will certify to the Owner that all work has been accomplished, to include punch list items, and establish an effective date. The Request for Final Payment shall reflect the date of final acceptance.

7.2 LIQUIDATED DAMAGES

A. **No liquidated damages.**

7.3 DELAYS AND EXTENSIONS OF TIME

- A. The Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine and as approved by the Owner.
- B. All Claims for extension of time shall be made in writing to the Architect no more than seven days after the Occurrence of the delay; otherwise they shall be waived. In the case of a continuing delay only one claim is necessary.
- C. It is mutually agreed between the parties that time is of the essence of this contract, and that there will be, on the part of the Owner considerable monetary damage in the event the work is not completed within the time fixed for completion in the Contract or within the time to which such completion may have been extended.
- D. The amount per calendar day set forth herein for each day that said Contract is not completed is hereby agreed upon as the liquidated damages for each and every calendar day that the time consumed in completing the work under the contract exceeds that time allowed therefore.
- E. The amount shall, in no event, be considered as a penalty or otherwise than as liquidated and adjusted damages to the Owner of the said Project, and the Contractor and his sureties shall be liable therefore.
- F. The Contractor agrees to make no claim for damages for delay in the performance of the contract occasioned by any act or omission of the Owner or any of its agents or representatives, or because of any injunction which may be brought against the Owner and agrees that any such claim shall be fully compensated for by an extension of time to complete performance of the Work as provided herein.
- G. No extension of time beyond the date of completion fixed by terms of the Contract shall be effective unless in writing, submitted to the Architect, and approved by Owner. The determination made by the Owner on an application for an extension of time shall be binding and conclusive on the Contractor.

PART 8 - PAYMENTS AND COMPLETION

8.1 SCHEDULE OF VALUES

- A. Within ten days after signing the Contract and before the first application for payment, the Contractor shall submit to the Architect a schedule of values of the various portions of the Work, including quantities if required by the Architect, aggregating the total Construction Sum, divided so as to facilitate

payments to Subcontractors in accordance with Paragraph 9.6, prepared in such form as specified or as the Architect and the Contractor may agree upon, and supported by such data to substantiate its correctness as the Architect may require. Each item in the schedule of values shall include its proper share of overhead and profit. This schedule, when approved by the Architect, shall be used only as a basis for the Contractor's Applications for Payment.

8.2 APPLICATION FOR PAYMENT

- A. On the twenty-fourth day of each month, the Contractor shall submit to the Architect an itemized Application for Payment and Certificate for Payment, for operations completed in accordance with the schedule of values. Such application shall be notarized, 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 reflecting retainage if provided for elsewhere in the Contract Documents.
- B. Payment for stored equipment or materials will be made only when said materials or equipment shall be installed within a 45 day period from date of delivery to site and storage is satisfactory to Owner.
- C. The Contractor warrants and guarantees that title to all Work, materials and equipment covered on Application for Payment, whether incorporated in the Project or not, will pass to the Owner upon the receipt of such payment by the Contractor, free and clear of all liens, claims, security interest or encumbrances, hereinafter referred to in this Article 9 as "liens"; and that no Work, materials, or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing the Work at the site or furnishing materials and equipment for the Project subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.
- D. The Contractor shall submit with each progress payment a "Payment Certification" (form enclosed herein) that identifies the project, contractor and date, which certifies the following:
 - 1. The percent complete based upon the plans and specifications.
 - 2. All claims for labor and materials have been paid or will be paid with the proceeds of this requisition.
 - 3. Statement that there are no liens other than permitted encumbrances outstanding against such portions of the project.
 - 4. All construction completed to date has been done in accordance with the plans and specifications relating thereto.
 - 5. All required surety bonds are in full force and effect.
 - 6. The building can be completed in accordance with plans and specifications, and the project budget relating thereto, on or before the

estimated completion date as modified, pursuant to the construction
contract between the contractor and the School Board.

(go to next page)

PAYMENT CERTIFICATION:

Project:

Contractor:

Address:

Pay Request #

Date:

The estimated percentage of the construction completed based upon the plans and specifications is _____ %.

All claims for labor and materials been paid or will be paid with the proceeds of this requisition.

There are no liens other than permitted encumbrances outstanding against such portion of the project.

All construction completed to date has been done in accordance with the plans and specifications relating thereto.

All required surety bonds and insurances are in full force and effect.

The building can be completed in accordance with the plans and specifications and the project budget relating thereto on or before the estimated completion date as modified pursuant to the construction contract between the Contractor and the School Board.

I certify that the above information is correct.

Contractor's Signature

Witness

8.3 CERTIFICATES FOR PAYMENT

- A. The Architect has issued a Certificate for Payment no later than the last day of the month. The Owner shall make payment no later than the tenth day of the month.
- B. No Certificate for a progress payment, not any progress payment, nor any partial or entire use or occupancy of the Project by the Owner, shall constitute an acceptance of any Work not in accordance with the Contract Documents.
- C. The Architect shall certify a payment of 95% of the value of the Work and materials as above noted according to his best judgement of the correct amount.
- D. On these monthly certificates, five percent (5%) of the total of the estimated work for that month shall be retained until completion and acceptance of the job.
- E. Upon substantial completion of the job, the Architect may issue a semi-final certificate covering payment up to ninety five percent (95%) of the Contract Sum less any reserves to cover any incomplete items.

8.4 PAYMENTS TO SUBCONTRACTORS

- A. If the Architect fails to issue a Certificate for Payment for any cause which is the fault of the Contractor and not the fault of a particular Subcontractor, the Contractor shall pay that Subcontractor on demand, made at any time after the Certificate for Payment should otherwise have been issued for his work to the extent completed, less the retained percentage.
- B. The Contractor shall pay each Subcontractor a just share of any insurance moneys received by the Contractor under Article 11, and he shall require each Subcontractor to make payments to his subcontractors.
- C. 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.
- D. Neither the Owner nor the Architect shall have any obligation to pay or to see the payments of any moneys to any Subcontractor except as may otherwise be required by Florida Statutes. Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs A, B and C.

8.5 FAILURE OF PAYMENT

- A. If the Architect should fail to issue any 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 should fail to pay the Contractor within ten days after the date of payment established in the Agreement any amount certified by the Architect, then the Contractor may, upon seven additional days written notice to the Owner and the Architect, stop the Work until payment of the amount owing has been received.
- B. 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, which shall be accomplished as provided in Article 7.

8.6 SUBSTANTIAL COMPLETION AND FINAL PAYMENT

- A. If after Substantial Completion of the Work and written approval by the State Department of Education, final completion thereof is materially delayed through no fault of the Contractor, and the Architect so confirms, the Owner may, upon 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 less an equal amount to three (3) times the estimated dollar costs of the incomplete work, but not less than one thousand dollars (\$1,000.00).

8.7 EMERGENCIES

- A. The Contractor shall provide at the site, and make available to all workers, medical supplies and equipment necessary to supply first aid service to all persons injured in connection with the work. The Contractor shall report any and all accidents in writing to Insurance Company, Owner and Architect within twenty-four (24) hours of the occurrence. The report shall contain the following information and it shall be the responsibility of the Contractor to have an accident report filled out in triplicate and submitted as required above with (1) Name of Person or Persons and Home Address, (2) Location of Occurrence, (3) Time of Day and Date, (4) Description of Occurrence, (5) Statements of Witnesses and (6) Signature of Contractor's Superintendent. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger. If any claim is made by anyone against the Contractor or any Subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Owner, giving full details of the Claims.

PART 9 - INSURANCE AND BONDS

9.1 CONTRACTOR'S LIABILITY INSURANCE

- A. The insurance required by Subparagraph 11.1.1 shall be written for not less than any limits of liability set forth below, required by Law or set forth in the

Contract Documents, whichever is greater. Other types as may be required by the Project Specifications shall also be furnished.

1. FURNISH TO THE OWNER A LETTER FROM THE INSURANCE COMPANY STATING THAT ALL REQUIRED INSURANCE HAS BEEN COMPLIED WITH AS SPECIFIED.
2. THE OWNER, Florida A&M University, AND THE ENGINEER, Watford Engineering, shall be named as an ADDITIONAL INSURED on the Contractor's general liability policies. (Being named as Certificate Holder is not acceptable.)
3. INSURANCE MUST BE MAINTAINED FOR ONE (1) YEAR AFTER FINAL PAYMENT if written on a claims-made basis.
4. All insurance shall contain provision that coverage afforded under the policies SHALL NOT BE CANCELED OR MODIFIED UNTIL A MINIMUM OF FIFTEEN (15) DAYS PRIOR WRITTEN NOTICE TO OWNER HAS BEEN GIVEN, AND THIS PROVISION SHALL BE NOTED ON CERTIFICATES OF INSURANCE.
5. Deliver to the Architect, before work commences, two (2) certificates evidencing compliance with all required insurance, using ACORD Certificate of Insurance and AIA Document G715, Supplemental Attachment for ACORD Certificate of Insurance 25.
6. Insurance required shall include Contractual Liability Insurance applicable to the Contractor's obligations under Article 3.
7. Property Insurance coverage shall include coverage of perils of windstorms, fire, lightning vandalism, malicious mischief and those included in extended coverage in the amount of one hundred percent (100%) of the values at risk. Extended coverage, vandalism, and malicious mischief insurance may contain the standard deductibles.
8. Contractor shall maintain valid Worker's Compensation Insurance as required by Chapter 440, Florida Statutes. All Subcontractors shall maintain valid Worker's Compensation as required by Florida Statutes.
9. Contractor shall maintain Public Liability Insurance against bodily injury, personal injury and property damage, in limits as specified. Coverage shall include Comprehensive General Liability and Products and Completed Operations Liability.
10. The amounts set forth herein and by Law shall apply equally or whether on or off the site of the Work.
11. Unless otherwise provided in the Contract Documents, property insurance shall cover portions of the Work stored off the site after written approval of the Owner at the value established in the approval, and also portions of the Work in transit.

9.2 BUILDER'S RISK INSURANCE

- A. It is the Contractor's responsibility to obtain, purchase and maintain property coverage's (Builder's Risk) shall be written for one hundred percent (100%) of the values at risk.

1. Such policy shall include the interest of Owner, Contractor, Subcontractors, and Sub-subcontractors or any other parties involved in the project. Perils insured shall be "All Risks" including flood, Earthquake, and Sinkhole. Contractor remains responsible for any deductible under such policy."
2. The Contractor shall purchase and maintain such machinery insurance as may be required by law. This insurance shall include the interests of the Owner, the Contractor, Subcontractor and Sub-subcontractor in the Work.
3. Any insured loss is payable to the Owner as trustee for the insured, as their interest may appear.
4. The Contractor shall file a copy of all policies with the Owner before an exposure to loss may occur.
5. If the Owner requests in writing that other special insurance be included in the property insurance policy, the Contractor shall, if possible, include such insurance, and the cost thereof shall be charged to the Owner by appropriate Change Order.
6. The Owner and Contractor waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance provided under this paragraph, except such rights as they may have to the proceeds of such insurance held by the Owner as trustee. The Contractor shall require similar waivers by Subcontractors and Sub-subcontractors.

9.3 REQUIREMENTS (MINIMUM)

A. WORKER'S COMPENSATION

Applicable	Per Florida Statute - Chapter 440
Railroad Required	NO
Maritime Required	NO
Employer's Liability	1,000,000

B. CONTRACTOR'S LIABILITY INSURANCE including CONTRACTUAL LIABILITY

Form of Insurance shall be:

Comprehensive General Liability, Premises and Completed Operations, Contractual Liability, Broad Form.

1. BODILY INJURY

Each Occurrence	1,000,000
Aggregate	1,000,000
2. PROPERTY DAMAGE

Including Complete Operations	
Broad Form	Yes

Each Occurrence	1,000,000
Aggregate	1,000,000

3. PERSONAL INJURY (WITH EMPLOYMENT EXCLUSION DELETED)

Each Occurrence	1,000,000
Aggregate	1,000,000

4. XCU COVERAGE included Yes

C. MOTOR VEHICLE LIABILITY - Owned, Non-owned and Hired

1. BODILY INJURY

Each Occurrence	1,000,000
Aggregate	1,000,000

2. PROPERTY DAMAGE

Each Occurrence	200,000
Aggregate	400,000

D. OWNER'S AND CONTRACTOR'S PROTECTIVE LIABILITY INSURANCE

The Contractor shall provide an Owner's and Contractor's Protective Liability Policy with the following limits: (A separate policy in the name of the Owner must be provided.)

1. BODILY INJURY

Each Occurrence	1,000,000
Aggregate	1,000,000

2. PROPERTY DAMAGE

Each Occurrence	1,000,000
Aggregate	1,000,000

3. PERSONAL INJURY

Each Occurrence	1,000,000
Aggregate	1,000,000

4. Optionally, the Owner may purchase and maintain other insurance for self-protection against claims which may arise from operations under the Contract.

E. PROPERTY INSURANCE

1. To be purchased by Contractor: Builders Risk Insurance on completed value form in the names of the Owner, Architect, and Contractor as their interests may appear with limits in an amount equal to the Contract Sum

for the work, including coverage for materials and equipment furnished by Owner to be incorporated or used in the project when stored off the site or when in transit. Coverage shall be provided on an all risk basis to include extended coverage for fire, lightning, wind storms, vandalism and malicious mischief.

9.4 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

- A. The Contractor shall furnish the Owner a Performance Bond equal to one hundred percent (100%) of the contract price. The Performance Bond shall extend as a guarantee bond for one (1) year after final acceptance of the Work, or until specified guarantees which exceed one year are satisfied. The Contractor shall furnish a Labor and Material Payment Bond equal to one hundred percent (100%) of the contract price.

PART 10 - UNCOVERING AND CORRECTING OF WORK

10.1 CONTRACTOR'S OBLIGATION

- A. The obligations of the Contractor under Article 12 shall be in addition to and not in limitation of any obligations imposed upon him by special guarantees required by the Contract Documents or otherwise prescribed by Law.

PART 11 - MISCELLANEOUS PROVISIONS

11.1 SUCCESSORS AND ASSIGNS

- A. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any monies due or to become due to him hereunder, without the previous written consent of the Owner.

11.2 TEST AND INSPECTIONS

- A. Neither the observations of the Architect in his administration of the Construction Contract, nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the Contract Documents.
- B. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.
- C. Not Required.

11.3 EQUAL OPPORTUNITY

- A. The Contractor and all subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age. The Contractor shall take affirmative actions to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, national origin or age. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertisement; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous place, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.
- B. The Contractor and all subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, national origin or age.

END OF SECTION 00900

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Ware-Rhaney Complex Electrical Gear Replacement

- 1. Project Location: Florida A&M University
Ware-Rhaney Complex
Tallahassee, FL 32307

- 2. Owner: Florida A&M University

B. Project Summary:

- 1. The work primarily includes the replacement of existing FPE electrical gear. This includes the main electrical switchgear, various other subpanels, and dry-type transformer(s).
- 2. The work will be constructed under a single prime contract.

C. Project Schedule:

The construction schedule to be built around lead times once contracts have been executed and Purchase Order(s) have been released for equipment purchase. **NO DEMOLITION ALLOWED UNTIL GEAR HAS BEEN RECEIVED AND ON SITE.**

1.3 CONTRACTOR USE OF PREMISES

- A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

- 1. Owner Occupancy: Allow for Owner occupancy and use by the public.
- 2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

- B. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

1.4 OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: The Owner will occupy the site and other buildings during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate owner usage. Perform the Work so as not to interfere with the Owner's operations.
- B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
 - 1. The Engineer will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner occupancy.
 - 2. Obtain a Certificate of Occupancy from:

**Leon County Schools, Office of Support Services
Code Enforcement, Compliance, Sustainability
& Small Business Enterprise Department
3420 West Tharpe Street, Suite 100
Tallahassee, FL 32303
Phone: 850-617-1838 (Permitting Line)
Email: black@leonschools.net**
 - 3. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will operate and maintain mechanical and electrical systems serving occupied portions of the building.
 - 4. Upon occupancy, the Owner will assume responsibility for maintenance and custodial service for occupied portions of the building.

PART 2 - PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01010

SECTION 01015 - OCCUPANCY DURING CONSTRUCTION

PART 1 - GENERAL

1.01 GENERAL:

- A. The premises shall be used during periods of the construction.
- B. The Owner reserves the right to occupy completed areas prior to Substantial Completion, provided that such occupancy does not inordinately interfere with the Contractor's completion of the work. Such partial occupancy shall not constitute acceptance of the work or any part of the work.
- C. The Contractor shall erect barricades, fences, etc., and exclude unauthorized personnel from the construction site. Contractor shall be responsible for coordinating designated parking areas, for protecting building surfaces and shrubbery or any other items or surfaces subject to construction.
- D. The Contractor shall confer with the Owner and shall schedule work, store materials, and restrict access to site in a manner that shall cause the least interference with normal activities of the facility.
- E. Where electrical interruption is required, **the contractor shall notify FAMU personnel a minimum of 48 hours prior to interruption.**
- F. It is intended that the work shall be started with a Notice to Proceed.

END OF SECTION 01015

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SECTION 01045 – CUTTING - PATCHING - CLEAN UP

PART 1 - GENERAL

1.01 DESCRIPTION OF THE WORK:

- A. Definition: "Cutting and patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.
1. Refer to other sections of these specifications for specific cutting and patching requirements and limitations applicable to individual units of work.

1.02 CUTTING AND PATCHING:

- A. Cutting and patching is the responsibility of the Contractor including attendant excavation and backfill required to complete the work or to:
1. Make its several parts fit together properly.
 2. Uncover portions of the work to provide for installation of ill- timed work.
 3. Remove and replace defective work.
 4. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.
 5. Provide shoring as specified herein.

1.03 STRUCTURAL WORK:

- A. Do not cut-and-patch structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio without Architect's approval of shoring plans. Submit proposal and request and obtain Architect's/Engineer's approval before proceeding with cut-and-patch of structural work.

1.04 VISUAL/QUALITY LIMITATIONS:

- A. Do not cut-and-patch work exposed to view (exterior and interior) in a manner resulting in noticeable reduction of aesthetic qualities and similar qualities, as judged by Architect/Engineer.

1.05 LIMITATIONS ON APPROVALS:

- A. Architect's/Engineer's approval to proceed with cutting and patching does not waive right to later require removal/replacement of work found to be cut-and-patched in an unsatisfactory manner, as judged by Architect/Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. General: Use materials for cutting and patching that are identical to existing materials. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials for cutting and patching that shall result in equal-or-better performance characteristics.

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Inspection: Before cutting, examine surfaces to be cut-and-patched and conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work.

3.02 TEMPORARY SUPPORTS:

- A. Provide adequate temporary supports as necessary to assure the structural integrity of the affected portion of the work.
- B. Temporary Support: To prevent failure, provide temporary support of work to be cut.
- C. Shoring: Contractor shall provide shoring plans and details signed, sealed and dated by a Florida Registered Structural Engineer.

3.03 PROTECTION:

- A. Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.

3.04 INTERFERENCE:

- A. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.05 PRECAUTIONS:

- A. Take precautions not to cut existing pipe, conduit or duct serving the building but scheduled to be relocated until provisions have been made to bypass them.

3.06 CUTTING:

- A. Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible, review proposed procedures with the original installer; comply with original installer's recommendations.
- B. Where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut and drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.

PART 4 - PERFORMANCE

4.01 GENERAL:

- A. Execute cutting and demolition by methods which shall prevent damage to other work, and shall provide the proper surfaces to receive repairs.
- B. Execute excavating and backfilling by methods which shall prevent settlement or damage to other work or the building.
- C. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
- D. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.

PART 5 - PATCHING

5.01 GENERAL:

- A. Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
- B. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which shall eliminate evidence of patching and refinishing.

PART 6 - CLEAN UP

6.01 GENERAL:

- A. Prior to final acceptance the Contractor shall thoroughly clean the entire project of all debris, excess material, trash or any other loose or foreign matter which is on the site at the completion of the project as a result of the work on the project. This shall include, but is not limited to, floors, finishes and site. Remove all debris associated with construction. Burning shall not be allowed on site.
- B. The Contractor for the general work shall keep the site of operations free from accumulations of rubbish and waste materials at all times, and shall require Subcontractors to remove and dispose of their debris. Removal and disposition of debris shall be made by Contractor at no cost to the Owner.
- C. Should any Contractor or Subcontractor allow rubbish or waste material to accumulate on any portion of the site or in any portion of the building to such extent that the accumulation constitutes a hazard or obstructs the prosecution of the work in any way, the Architect or Owner may, if Contractor/Subcontractor at fault fails to remove such debris or waste material after written notice to clear up the accumulation, engage proper labor or services of another Contractor to make necessary removal and disposition and to charge cost against monies due the Contractor.
- D. Flammable and combustible materials shall be kept in metal cans with tight covers, and removed from building at end of each working day.

END OF SECTION 01045

SECTION 01090 - DEFINITIONS AND STANDARDS

PART 1 - DEFINITIONS

1.1 GENERAL

- A. Except as specifically defined otherwise, the following definitions supplement definitions of the Contract, General Conditions, Supplementary Conditions and other general contract documents, and apply generally to the work.
- B. The provisions of Division 0 sections, General Requirements, apply to the entire work of the Contract.
- C. Indicated: Shown on drawings by notes, graphics or schedules, or written in other ways have same meaning as "indicated", and are used to assist the reader in locating particular information.
- D. Directed, Requested, Reviewed, etc.: These terms imply "by the Architect/Engineer", unless otherwise indicated.
- E. "Reviewed by Architect/Engineer" in no case releases Contractor from responsibility to fulfill requirements of Contract Documents.
- F. Space available to Contractor at location of project, either exclusively or to be shared with separate contractors, for performance of the work.
- G. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements.
- H. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working dimension, finishing, curing, protecting, cleaning, and similar requirements.
- I. Provide: Furnish and install, complete and ready for intended use.
- J. Installer: Entity (firm or person) engaged to install work, by Contractor, Subcontractor or Sub-subcontractor. Installers are required to be skilled in work they are engaged to install.
- K. Specification Text Format: Underscoring facilitates scan reading, no other meaning. Imperative language is directed at Contractor, unless otherwise noted.
- L. Overlapping/Conflicting Requirements: Most stringent (generally) requirement written directly into the Contract Documents is intended and shall be enforced. Refer uncertainties to the Architect/Engineer for a decision before proceeding.

1. Where optional requirements are specified in parallel manner, option is intended to be Contractor's unless otherwise indicated.
- M. Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual work must comply (within specified tolerances), or may exceed minimums within reasonable limits. Refer uncertainties to Architect/Engineer before proceeding.
- N. Abbreviations, Plural Words: Abbreviations, where not defined in Contract Documents, shall be interpreted to mean the normal construction industry terminology, determined by recognized grammatical rules, by the Architect/Engineer. Plural words shall be interpreted as singular and singular words shall be interpreted as plural where applicable for context of Contract Documents.
- O. Testing Laboratory: An independent entity engaged for the project to provide inspections, tests, interpretations, reports and similar services.

PART 2 - STANDARDS AND REGULATIONS

2.1 GENERAL:

- A. Industry Standards: Applicable standards of construction industry have same force and effect on performance of the work as if copied directly into the Contract Documents or bound and published therewith. Standards referenced in Contract Documents or in governing regulations have precedence over non-referenced standards, insofar as different standards may contain overlapping or conflicting requirements. Comply with standards in effect as of date of Contract Documents, unless otherwise indicated.
- B. Abbreviations: Where abbreviations or acronyms are used in Contract Documents, they mean the well recognized name of entity in building construction industry; refer uncertainties to Architect/Engineer before proceeding, or consult "Encyclopedia of Associations" by Gale Research Company.

END OF SECTION 01090

SECTION 01150 - SCHEDULE OF VALUES AND REQUEST FOR PAYMENT

PART 1 - GENERAL

1.1 SCHEDULE OF VALUES

- A. As required by the General Conditions, Article 9, the Contractor shall submit a schedule of values allocated to the various portions of the project.
- B. Schedule shall be submitted within ten (10) days of signing contract.
- C. Upon request of the Architect/Engineer, support the values with data which shall substantiate their correctness.
- D. The schedule of values, unless objected to by the Architect/Engineer, shall be used only as the basis for the Contractor's Applications for Payment.
- E. Related requirements specified in other sections apply.

PART 2 - FORM AND CONTENT OF SCHEDULE OF VALUES

2.1 GENERAL

- A. Type schedule on 8-1/2 x 11" white paper: Contractor's standard forms and automated printout shall be considered for approval by Architect/Engineer upon Contractor's request. Identify schedule with:
 - 1. Title of project and locations.
 - 2. Architect/Engineer and project number.
 - 3. Name and address of Contractor.
 - 4. Contract designation.
 - 5. Date of submission.
- B. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Follow the table of contents of the Project Manual as the format for listing component items.
 - 1. Identify each line item with the number and title of the respective major section of the specifications.

PART 3 - PROJECTED VALUES

3.1 PROJECTED DRAW AMOUNTS

- A. A schedule showing the projected (estimated) amount of each Application and Certificate to the end of the project shall be submitted within ten days of signing the Contract. This schedule will be non binding.
- B. A revised schedule of projected amount for each of the remaining Applications and Certificates of Payment shall be submitted with each request for payment. This shall be updated to reflect the history and current status of the draws plus projecting future amounts.

PART 4 - REQUEST FOR PAYMENT

4.1 GENERAL

- A. Submit itemized applications typed on AIA Document G702, Application and Certification for Payment, and continuation sheet(s) G702A.
- B. Attach executed Payment Certification Form per Section 00800 Article 9, Paragraph 9.3.5.

PART 5 - SUBMITTAL PROCEDURE

5.1 GENERAL

- A. Submit Applications for Payment to Architect at the times stipulated in the Agreement.
- B. Number: Three (3) copies of each Application.
- C. When Architect/Engineer finds the application properly completed and correct, he shall transmit a certificate for payment to Owner, with a copy to Contractor.
- D. Prior to the initial payment request, submit:
 - 1. List of principal subcontractors and suppliers.
 - 2. Schedule of values.
 - 3. Progress schedule and first progress report.
 - 4. Copies of building permits and similar start-up authorization or certifications.
 - 5. Performance/payment bonds (if required).
 - 6. Evidence of insurance coverage.
- E. Following issuance by Architect/Engineer of Certificate of Substantial Completion, Contractor may submit special payment request, provided the following have been completed:

1. Obtain permits, certificates of inspection and other approval and releases by governing authorities, required for Owner's occupancy and use of project.
 2. Submit warranties and similar documentation.
 3. Submit maintenance manuals and provide instruction of Owner's operation/ maintenance personnel.
 4. Complete final cleaning of the work.
 5. Submit record documents.
 6. Submit listing of work to be completed before final acceptance.
- F. Following completion of the following requirements, final payment request may be submitted:
1. Complete work listed as incomplete at time of substantial completion, or otherwise assure Owner of subsequent completion of individual incomplete items.
 2. Settle liens and other claims, or assure Owner of subsequent settlement.
 3. Submit proof of payment on fees, taxes and similar obligations.
 4. Transfer operational, access, security and similar provisions to Owner; and remove temporary facilities, tools and similar items.
 5. Completion of requirements specified in "Project Close-out" - Section 01700.
 6. Obtain Consent of Surety for final payment.

END OF SECTION 01150

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SECTION 01160 - PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Contractor shall develop a Progress Schedule demonstrating fulfillment of the contract requirements, shall keep the schedule up to date in accordance with the requirements of this section.

1.2 CONTRACTOR'S REPRESENTATIVE

- A. The Contractor shall designate an authorized representative in the firm who shall be responsible for the preparation of the schedule, review and report progress of the project with and to the Architect. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the requirements of this specification section and such authority shall not be interrupted throughout the duration of the project.

PART 2 - PAYMENT AND PROGRESS REPORTING

2.1 MEETINGS AND REPORTS

- A. Job site progress meetings shall be held monthly on dates mutually agreed to by the Owner (or Representative), the Architect, and the Contractor. Contractor shall be required to attend all monthly progress meetings. Presence of Subcontractors during progress meetings is optional unless required by the Architect. The Contractor shall complete their copy of the "look-ahead report" and all other data required by this section shall be accurately filled in and completed prior to the progress meeting. The Contractor shall provide this information to the Architect.

PART 3 - RESPONSIBILITY FOR COMPLETION

3.1 MEETING COMPLETION DATES

- A. Whenever it becomes apparent from the current progress review meeting that the contract completion dates shall not be met, the Contractor shall execute some or all of the following remedial actions:
1. Increase construction manpower in such quantities and crafts as necessary to eliminate the backlog of work.
 2. Increase the number of working hours per shift, shifts per working day, working day per week, the amount of construction equipment, or any combination of the foregoing to eliminate the backlog of work.

3. Reschedule the work in conformance with the specification requirements.
- B. Prior to proceeding with any of the above actions, the Contractor shall notify and obtain approval from the Architect for the proposed schedule changes.

PART 4 - ADJUSTMENT OF CONTRACT COMPLETION

4.1 REQUESTS FOR EXTENSION

- A. The contract completion time shall be adjusted only for causes specified in this contract. Request for an extension of the contract completion date by the Contractor shall be supported with a justification and supporting evidence as the Architect may deem necessary for determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. The Architect shall, within a reasonable time after receipt of such justification and supporting evidence, review the facts and advise the Contractor in writing of the Owner decision. (See General Conditions, Section 00800 and Supplemental General Conditions, Section 00900)
- B. Request for extension of time shall be submitted to Architect for review prior to recommendations to Owner.
- C. The Contractor shall submit each request for a change in the contract completion date to the Architect. The Contractor shall include, as a part of each change order proposal, a sketch showing revisions, for the work in question and its relationship to other activities on the approved schedule.
- D. The original schedules shall be in reproducible form, with two (2) copies each. The original reproducible form, after approval, must be used each month with the up-date information added to the reproducible schedules and three (3) copies of the schedules submitted with request for payment.

END OF SECTION 01160

SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 PRECONSTRUCTION CONFERENCE:

- A. After all required documents are in order and before actually starting work at the site, the Architect shall schedule a Preconstruction Conference with all interested parties in attendance.
- B. It shall be the aim of this conference to discuss and resolve any last-minute details and/or questions which any of the interested parties to the work may have and which have not been previously addressed.
- C. The time and place of the meeting shall be announced to all parties involved by the Architect.

PART 2 - PROJECT MEETINGS

2.1 GENERAL

- A. Conduct general progress and coordination meetings weekly, attended by a representative of each primary entity engaged for performance of work. Contractor shall record discussions and decisions, and distribute copies to those attending and others affected including Architect/Engineer and Owner.
- B. Contractor shall prepare and present a three (3) week Daily Progress Schedule at each monthly meeting. This schedule shall be updated and attached to each monthly Request for Payment. (See Progress Schedules - Section 01160).
- C. In the event the Daily Progress Schedule indicates failure to comply with the actual scheduled daily completion dates, the Contractor shall be required to work additional time to bring the project into compliance with the Schedule. This additional time shall be performed on request of the Architect without additional cost to Owner.
- D. Schedule meetings to coordinate with preparation of payment requests.

END OF SECTION 01200

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SECTION 01205 - PROCEDURES AND CONTROLS

PART 1 - ADMINISTRATION AND SUPERVISION

1.1 COORDINATION

- A. Coordinate various elements of the work and entities engaged to perform work; and coordinate the work with existing facilities/conditions, and with work by separate Contractors (if any) and by Owner.

PART 2 - SURVEYING/RECORDING

2.1 GENERAL

- A. Working from established lines and levels at or near project site, establish and maintain dependable markers for lines and levels of the work. Calculate dimensions and measure for layout of work; do not scale the drawings. Maintain surveyor's log of layout work. Record deviations (if any) from drawing information on existing conditions and review with Architect/Engineer at time of discovery.

PART 3 - INSPECTIONS AND TESTING

3.1 GENERAL

- A. Provide required inspection and testing services specified to be by independent agencies, where not indicated specifically as Owner's responsibility (this provision supplements General Conditions). Neither inspection and test results nor failure thereof to disclose deficiencies relieves General Services Contractor of responsibility to comply with requirements of Contract Documents. Provide services to inspection and testing agencies (Owner's and Contractor's), including taking and delivery of samples, patching work and similar assistance. Require engaged agencies to perform indicated testing and submit reports promptly; and to report significant observations having an important bearing on the work, to the Architect/Engineer by the most expeditious means possible.
- B. Installer Inspections: Require Installer of each major unit of work to inspect substrate and conditions for installation, and to report (in writing) unsatisfactory conditions. Correct unsatisfactory conditions before proceeding. Inspect each product immediately before installation, and do not install damaged or defective products, materials or equipment.

PART 4 - PREPARATION FOR INSTALLATION

4.1 PRE-INSTALLATION CONFERENCE

- A. Prior to starting installation of each major component of the work, hold a pre-installation conference, attended by each entity involved or affected by planned installation. Include technical representatives of product manufacturers and others recognized as expert or otherwise capable of influencing success of the installation. Review significant aspects of requirements for the work. Record discussion and distribute as plan of action.

PART 5 - INSTALLATION, GENERAL

5.1 GENERAL

- A. Comply with manufacturer's instructions and recommendations to extent printed information is more detailed or stringent than requirements contained directly in Contract Documents.
- B. Timing: Install work during time and under conditions which shall ensure best possible results, coordinated with required inspection and testing.
- C. Anchor work securely in place, properly located by measured line and level, organized for best possible uniformity, visual effect, operational efficiency, durability, and similar benefit to Owner's use. Isolate non-compatible materials from contact sufficiently to prevent deterioration.
- D. Mount individual units of work at industry-recognized mounting heights, if not otherwise indicated; refer uncertainties to Architect/Engineer before proceeding.

PART 6 - CLEANING AND PROTECTION

6.01 GENERAL

- A. Clean each element of work at time of installation. Provide sufficient maintenance and protection during construction to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01205

SECTION 01300 – SUBMITTALS - SHOP DRAWINGS - PRODUCT DATA -
SAMPLE

PART 1 - GENERAL

1.1 SHOP DRAWINGS

- A. Submit shop drawings, Product Data and Samples required by the Contract Documents.
- B. Related requirements specified in other sections:
 - 1. Warranties: Section 01350
 - 2. Electrical: Division 16
- C. "EQUIVALENT SUBSTITUTIONS" - See Section 01631 - Products and Substitutes. Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's or vendor's names, catalog numbers, etc., it is intended merely to establish a standard; and, any material, article, or equipment of other manufacturers and vendors which shall perform adequately the duties imposed by the general design shall be considered equally acceptable provided the material, article or equipment so proposed, is, in the opinion of the Architect/Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Architect's/Engineer's written review.
- D. Definitions of Shop Drawings, Product Data and Samples are as follows:
 - 1. Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.
 - 2. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work.
 - 3. Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work shall be judged.

PART 2 - PROCEDURES

2.1 GENERAL

- A. General Contractor shall submit all Shop Drawings, Product Data and Samples. The Contractor shall review, approve and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Owner or any separate Contractor, all Shop Drawings, Product Data and Samples required by Contract Documents.
- B. The General Contractor shall stamp each submittal or portion of submittal to be forwarded to the architect with a uniform, self explanatory action stamp, appropriately marked and executed including date and signature to indicate the status of the submittal, or portion of submittal. The General Contractor by approving and submitting Shop Drawings, Product Data and Samples, represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or shall do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.
- C. General Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Architect's review of Shop Drawings, Product Data or Samples unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submission and the Architect has given written acknowledgment of the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by the Architect's review thereof.
- D. General Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, product Data or Samples, to revisions other than those requested by the Architect on previous submittals.
- E. No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been reviewed by the Architect as provided. All such portions of the Work shall be in accordance with reviewed submittals.
- F. The Architect shall review or take other appropriate action upon Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Architect's review of a specific item shall not indicate approval of an assembly of which the item is a component.
- G. Coordination: Coordinate the preparation and processing of work- related submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities that require sequential

activity. Coordinate the submittal of different units of interrelated work so that one submittal shall not be delayed by the necessity of reviewing a related submittal.

- H. Submit all Structural, Mechanical, and Electrical items at one (1) time.
- I. Submit material selections promptly and together with respective Shop Drawings.

PART 3 - DISCONTINUED ITEMS

3.1 GENERAL

- A. Every effort is made to select and use products and colors that are currently in production. Statements that a color or product is out of production shall not be accepted unless accompanied by written proof from the manufacturer of the product.

PART 4 - COLOR SUBMITTALS

4.1 GENERAL

- A. The Architect's Color Schedule requires that all submittals be in as early as possible after Contract is awarded for him to properly coordinate and make color selections. A color schedule shall not be produced until all items requiring color samples are on hand in the Architect's office and all shop drawings requiring color are stamped "reviewed" or "furnished as corrected". General Contractor shall be aware that time will be required for school approval of final color board. See Part 6 - Reviewing Time - Paragraph 6.1.

PART 5 - SUBMITTAL CONTENTS

5.1 GENERAL

- A. The date of submission and the dates of any previous submissions.
- B. The project title and number. Submittals not clearly marked to identify the material, equipment and accessories on which approval is requested shall be returned without action, for identification and resubmittal.
- C. Contract identification.
- D. The names of: Contractor, Supplier, Manufacturer.
- E. Identification of the product, with the specification section number.

- F. Field dimensions, clearly identified as such.
- G. Relation to adjacent or critical features of the work or materials.
- H. Applicable standards, such as ASTM or Federal Specification numbers.
- I. Identification of deviations from Contract Documents.
- J. Identification of revisions on resubmittal.
- K. Package each submittal appropriately for transmittal and handling.
- L. General Contractor's Review Stamp indicating that the Contractor has reviewed and approved the submittal as being in compliance with the Contract Documents on each copy of submittal, signed and dated.

PART 6 - REVIEWING TIME

6.1 GENERAL

- A. Shop Drawings shall be submitted in adequate time as not to delay progress of the work. Allow minimum of three (3) weeks for processing of each submittal. No extension of time shall be allowed because of failure to transmit submittals to the Architect/Engineer sufficiently in advance of the Work.
- B. Allow three weeks for approval of colors after all color samples have been received by Architect.

PART 7 - SPECIFIC REQUIREMENTS

7.1 SHOP DRAWINGS (OTHER THAN SAMPLES AND PRODUCT DATA)

- A. All submittals 11" X 17" or smaller submit one (1) copy of each item for review. (except as noted below).
 - 1. All submittals larger than 11" X 17" shall be submitted as follows:
 - a. Initial submittal: Submit two opaque blue/black line prints and one correctable, reproducible transparency. The transparency shall be processed and returned.
 - b. After approval Contractor shall print and process all copies necessary for job use and distribution.
 - c. Where it is necessary to provide intermediate submittals between the initial and final submittals, provide and process

intermediate submittals in the same manner as for initial submittals. See Mechanical and Electrical Sections for their specific Shop Drawing Requirements.

2. All submittals requiring signatures and/or raised seals - submit (4) four originals.
3. Architect's Review of Submittals:

- a. Submittals reviewed by the Architect shall be returned to the Contractor stamped or marked by the Architect as follows:

"REVIEWED" - Means that fabrication, manufacture and/or construction may proceed providing the work is in compliance with the Contract Documents.

"REJECTED" - Means no work shall be fabricated, manufactured, and/or constructed and that the Contractor shall make a new submittal to the Architect. Any submissions marked "Rejected" shall not be permitted on the site.

"REVISE AND RESUBMIT" - Means that the submittal shall be revised and resubmitted due to inadequacies beyond minor corrective action on the submittal.

"FURNISH AS CORRECTED" - Means that fabrication, manufacture, and/or construction may proceed providing the work is in compliance with the Architect's corrections and the Contract Documents.

7.2 SAMPLES

- A. Submit three (3) samples when required. Submit with Shop Drawing if Shop Drawing is required. Submit three (3) color samples at same time.
 1. Tag or mark each sample for identification.
 2. Products and materials requiring submittals are noted in the individual sections of the specifications.
 3. Submit two (2) sets of samples; one set shall be returned. Provide three (3) or more samples in each set where variations in color, pattern or texture are observable; show average condition and extreme range of variations. Submit full documentation with each set. Sample submittals are for Architect/Engineer's observations of color, texture, pattern and "kind". Maintain one (1) returned set at project site for purposes of quality control comparisons.

7.3 PRODUCT DATA

- A. Mark each copy to indicate the actual product to be provided; show selections from among options in the manufacturer's printed Product Data. Submit six (6) copies to Architect/Engineer; submittal is for information and record purposes only. Where the Product Data is required for maintenance manuals, submit two (2) additional copies which shall be returned. Maintain one (1) additional copy at the project site for reference purposes.
- B. Preparation: Clearly mark each copy to identify pertinent products or models.
1. Show performance characteristics and capacities, complete with all required test data.
 2. Show dimensions and clearances required.
- C. Manufacturer's schematic drawings and diagrams:
1. Modify drawings and diagrams to delete information which is not applicable to the work.
 2. Supplement standard information to provide information specifically applicable to the work.
 3. Show wiring or piping diagrams and controls.

PART 8 - DISTRIBUTION

8.1 GENERAL

- A. Distribute reproductions of Shop Drawings and copies of Product Data which carry the Architect's/Engineer's stamp of approval to:
- Job Site file
 - Other affected Contractors
 - Subcontractors
 - Supplier of Fabricator
 - Owner
- B. Documents and Samples at the Site: The Contractor shall maintain at the site for the Owner one record copy of all Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record all changes made during construction and approved Shop Drawings, Product Data and Samples. These shall be available to the Architect and shall be delivered to him for the Owner upon completion of the Work.

PART 9 - MISCELLANEOUS SUBMITTALS

9.1 GENERAL

A. Provide copies of miscellaneous submittals as follows:

1. Warranties: Submit two (2) executed copies, plus additional copies as required for maintenance manuals.
2. Inspection and Test Reports: Where not processed as Shop Drawings or Product Data, provide two (2) copies plus additional copies as required for maintenance manuals.
3. Field Records: Four (4) copies, including one copy which shall be returned for inclusion in the submittal of record documents.
4. Maintenance Manuals: Submit two (2) bound copies.
5. Record Drawings: See Section 01700 - Project Close-out, As-Built Drawings.
6. Miscellaneous Record Documentation: Provide the original maintained marked-up copy.

PART 10 - ARCHITECT'S/ENGINEER'S ACTION

10.1 GENERAL

- A. Stamp: The Architect/Engineer shall stamp each submittal to be returned with a uniform, self explanatory action stamp, appropriately marked and executed to indicate the status of the submittal. (See Part 7.)

PART 11 - REQUIRED SUBMITTALS

11.1 LIST OF SUBMITTALS

- A. The following list of required submittals is for the General Contractor's convenience only. The General Contractor shall carefully review the specifications for additional requirements and submit those as required. The following list does not relieve the General Contractor from complying with all specifications requirements. Any item required here shall be submitted. Additional items which may be required for the proper execution of the work shall be submitted as directed by the Architect.
- B. Submit number of copies of shop drawings, project data and samples which General Contractor requires for distribution plus four (4) copies which shall be retained by the Architect.

END OF SECTION 01300

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SECTION 01331 - TIME EXTENSION - WEATHER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, and Division-1 Specifications, apply to work of this section.

1. See General and Special Conditions

PART 2 - TIME EXTENSIONS

2.1 EXTENSIONS

A. Extensions for weather may be granted for weather in excess of normal that adversely impacts ongoing activities on the site that have successive following activities that must be completed in a required sequence for completion of the project within the specified performance period. These would be generally labeled as Critical Path Activities when that type of schedule is used.

2.2 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

A. In order for an award of a time extension under this clause, the following conditions must be satisfied:

1. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.
2. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

B. The following is a schedule of monthly anticipated adverse weather days. This will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DAYS

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
5	4	5	3	3	5	7	7	5	3	4	4

C. Upon acknowledgment of the Notice to Proceed and continuing throughout the contract, the Contractor will record on the daily report the occurrence of adverse weather and resultant impact to normally schedule work. Actual adverse weather

delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day.

The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph B above, the Architect will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification.

2.3 REQUEST FOR WEATHER EXTENSION

A. Any request for a time extension for weather must include:

1. Weather data from Military Installation or National Weather Services for the time period in question.
2. Impact on ongoing activities.
3. Relation of those activities to completion of the project.
4. Other information and documentation as requested by the Architect.
5. Requests for time extensions as indicated above must be made in writing to the Architect no more than seven days after the of the period of excessive weather. No time extensions will be granted for weather if not requested within seven days as indicated above.

2.4 HURRICANE PREPAREDNESS PLAN

- A. GC is required to take special care and precautions in the event of all severe inclement weather.
- B. A normal condition of alertness shall be maintained in the Work area during the hurricane season unless a higher condition of hurricane readiness is prescribed. GC shall develop a Hurricane Readiness Plan for Work areas and insure that the plan provides all necessary precautionary measures and procedures to be employed by their forces prior to the occurrence of a hurricane or destructive wind storm in the area. The plan shall be placed into effect for the hurricane season, designated as beginning on 1 June of each year and ending on 30 November.

CONDITIONS OF READINESS

Seasonal/Hurricane Condition: Hurricane Season Readiness:
Condition IV: Storm may hit this area in 72 hours.
Condition III: Storm may hit this area in 48 hours.
Condition II: Storm may hit this area in 24 hours.
Condition I: Storm will hit this area.

- C. Condition III and II - In the event U.S. Weather Bureau sets special weather conditions, GC shall take precautions established when Condition III or Condition II has been set.

GC shall inspect and adequately secure the Work depending on weekday or weekend time period.

- D. Condition I - GC shall inspect the site and Work at an appropriate time to insure the area is secure and consistent with the current Condition of Readiness in effect or expected to be placed in effect. If it is likely Condition I will be set during the weekend or after regular working hours, the GC shall secure the Work area in accordance with the expected condition prior to close of regular working hours.
- E. Preparations - All loose materials shall be secured. Of utmost concern is the amount of material, equipment, vehicles, storage sheds, state of site drainage, openings/glass areas, roof conditions that can become missiles in heavy winds and cause damage to buildings, personnel and other property.

END OF SECTION 01331

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SECTION 01350 - WARRANTIES

PART 1 - GENERAL

1.1 WARRANTIES

- A. Per the general conditions, the Contractor shall warrant all materials and work for one (1) year from date of Substantial Completion unless otherwise noted.
- B. Refer to Divisions 2 through 16 sections for specific content requirements and particular requirements for all warranties.

PART 2 - OPERATION MANUALS

2.1 GENERAL

- A. Contractor shall file in one place all operation, maintenance or other manuals received with finishes and equipment and upon completion of project, present these to the Owner with notification, in writing, to the Architect that this has been accomplished.

END OF SECTION 01350

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SECTION 01400 - QUALITY CONTROL SERVICES

PART 1 - DESCRIPTION

1.1 GENERAL

- A. Quality control services include inspections and tests performed by independent agencies and governing authorities, as well as by the Contractor. Inspection and testing services are intended to determine compliance of the work with requirements specified. Specific quality control requirements are specified in individual specification sections.

PART 2 - RESPONSIBILITIES

2.1 GENERAL

- A. Contractor Responsibilities: Except where indicated as being the Owner's responsibility, quality control services are the Contractor's responsibility, including those specified to be performed by an independent agency and not by Contractor. The Contractor shall employ and pay an independent agency, testing laboratory or other qualified firm to perform quality control services specified.
1. The Owner shall engage and pay for services of an independent agency to perform the inspections and tests that are as specified and tests that are specified as Owner's responsibilities.
- B. Retest Responsibilities: Where results of inspections or tests do not indicate compliance with Contract Documents, retests are the Contractor's responsibility.
- C. Responsibility for Associates Services: The Contractor shall cooperate with independent agencies performing inspections or tests. Provide auxiliary services as are reasonable. Auxiliary services include:
- Provide access to the work.
- D. Coordination: The Contractor and independent test agency shall coordinate the sequence of their activities. Avoid removing and replacing work to accommodate inspections and tests. The Contractor is responsible for scheduling times for inspections and tests.
- E. Qualifications for Service Agencies: Engage inspection and test service agencies which are pre-qualified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories.

- F. Submittals: Submit a certified written report of each inspection, test or similar service, in duplicate to the Architect/Engineer. Submit additional copies of each report to governing authority, when the authority so directs.
- G. Report Data: Written inspection or test reports shall include:
- Names of testing agency or test laboratory.
 - Dates and locations of samples, tests or inspections.
 - Names of individuals present.
 - Complete inspection or test data.
 - Test Results.
 - Interpretations.
 - Recommendations.
- H. Repair and Protection: Upon completion of inspection or testing repair damaged work and restore substrates and finishes.

END OF SECTION 01400

SECTION 01500 - TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 TEMPORARY STORAGE AND OFFICE:

- A. Contractors shall provide for his own use at the site, such storage and office space as deemed necessary.
- B. Provide a temporary fence around the area. Location shall be approved by Authorities on the site before installation.
- C. Trailers and sheds and fenced areas as necessary shall be located only with the Owners approval.

1.2 USE CHARGES

- A. Usage charges for temporary services of facilities are not chargeable to the Owner or Architect/Engineer.

1.3 REGULATIONS

- A. Comply with requirements of local laws and regulations governing construction and local industry standards, in the installation and maintenance of temporary services and facilities.

1.4 STANDARDS

- A. Comply with the requirements of NFPA Code 241, "Building Construction and Demolition Operations", the ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and the NECA National Joint Guideline NJG-6 "Temporary Job Utilities and Services".

1.5 INSPECTIONS

- A. Inspect and test each service before placing temporary utilities in use. Arrange for inspections and tests by governing authorities, and obtain certifications and permits for use.

1.6 SUBMITTALS

- A. Submit copies of reports and permits required or necessary for installation and operation, including reports of tests, inspections and meter readings performed on temporary utilities, and permits and easements necessary for installation, use and operation.

1.7 MATERIALS AND EQUIPMENT

- A. Provide new materials and equipment for temporary services and facilities; if acceptable to the Architect/Engineer, used materials and equipment that are undamaged may be used. Provide materials and equipment that are suitable for the intended use.

1.8 INSTALLATION

- A. Use qualified tradesmen for installation. Locate temporary services and facilities where they shall serve the project adequately and result in minimum interference with the work.

PART 2 - TOILET FACILITIES

2.1 GENERAL

- A. General Contractor shall provide his toilet facilities. Units shall be of the chemical type, sanitary, ventilated and clean. Location shall be within the construction office/storage area.
- B. General Contractor shall comply with governing regulations including Safety and Health Codes for type, number, location, operation and maintenance of fixtures and facilities.

PART 3 - UTILITIES, GENERAL

3.1 GENERAL

- A. Not Required.
- B. Power: General Contractor shall provide all extension lines as required for his use. Power shall be obtained from locations authorized by Owner. Owner shall bear all cost.
- C. Power Distribution System: Provide circuits of proper sizes, characteristics, and ratings for each use indicated. Install wiring overhead, and risers vertically where least exposed to damage. Provide rigid steel conduit to protect wiring on grade, floors, decks or other areas exposed to possible damage.
 - 1. Not Required
 - 2. Provide warning signs at power outlets that are other than 110/120 volt. Provide outlets of proper NEMA configuration to prevent insertion of 110/120 volt plugs into higher voltage outlets.
- D. Not Required.

- E. Telephone: Contractor's superintendent shall maintain a phone (fixed or portable) where he can be reached during normal business hours. Additionally, the Owner shall be given an after hours number for emergency use only.

PART 4 - PROTECTION OF OCCUPANTS

4.1 GENERAL

- A. Provide temporary fencing, barricades, supports, partitions, etc. as required to provide protection to occupants, and to exclude unauthorized persons from work areas.
- B. Protection of Facilities: Provide protection from damage, dust, etc. to all items in vicinity of contract work including, but not limited to, adjacent building surfaces, finishes, items of equipment, utilities, etc. Repair any damage to Owner's satisfaction at no additional cost to Owner.

PART 5 - LIFTING DEVICES AND HOISTING FACILITIES – Not Required

PART 6 - TEMPORARY HEAT not required

PART 7 - FIRST AID SUPPLIES

7.1 GENERAL

- A. Comply with governing regulations and recognized recommendations within the construction industry.

PART 8 - DEWATERING FACILITIES AND DRAINS – Not Required

PART 9 - TEMPORARY ENCLOSURE

9.1 GENERAL

- A. Provide temporary enclosure of materials, equipment, work in progress and completed portions of the Work to provide protection from exposure, foul weather, other construction operations, and similar activities. Provide enclosures where temporary heat is needed and the permanent building enclosure is not complete, and there is no other provision for containment of heat. Coordinate with ventilating and material drying or curing requirements to avoid dangerous conditions.
- B. Provide temporary enclosures by installing waterproof, fire resistant, UL labeled tarpaulins with a flame-spread rating of 15 or less, using a minimum of wood framing. Use translucent nylon reinforced laminated polyethylene tarpaulins to admit the maximum amount of daylight in. Individual openings of 25 square feet or less may be closed with plywood or similar materials.

- C. Close openings through the floor or roof decks and other horizontal surfaces with substantial load-bearing wood-framed or similar construction.

PART 10 - COLLECTION AND DISPOSAL OF WASTES

10.1 GENERAL

- A. Establish a system for collection and disposal of waste materials. Enforce requirements strictly. Do not hold collected materials longer than seven (7) days during normal weather or three (3) days when the daily temperature is expected to rise above 80 degrees F. (27 degrees C). Handle waste materials that are hazardous, dangerous, or unsanitary separately from other waste by containerizing. Dispose of waste material in a lawful manner.

PART 11 - RODENT AND PEST CONTROL – Not Required

PART 12 - MISCELLANEOUS SERVICES AND FACILITIES

12.1 GENERAL

- A. Design, construct, and maintain miscellaneous services and facilities as needed to accommodate performance of the Work, including temporary ramps, ladders, staging, shoring, scaffolding, temporary partitions, and similar items.

PART 13 - SECURITY AND PROTECTION FACILITIES INSTALLATION

13.1 GENERAL

- A. Provide a neat and uniform appearance in security and protection facilities acceptable to the Architect/Engineer and the Owner. Maintain site in a safe, lawful and publicly acceptable manner. Take necessary measures to prevent erosion.

PART 14 - TEMPORARY FIRE PROTECTION – Not Required

PART 15 - BARRICADES, WARNING SIGNS AND LIGHTS

15.1 GENERAL

- A. Comply with recognized standards and code requirements for erection of substantial barricades a minimum of 6' high where needed to prevent accidents. Paint with appropriate colors and warning signs to inform personnel at the site and the public of the hazard being protected against. Provide lighting where needed, including flashing red lights where appropriate.

PART 16 - SECURITY ENCLOSURES AND LOCKUP

16.1 GENERAL

- A. Install substantial temporary enclosures of partially completed areas of construction. Provide locking entrances adequate to prevent unauthorized entrance, vandalism, theft and similar violations of project security.
- B. Where materials and equipment must be temporarily stored, and are of substantial value or attractive for possible theft, provide a secure lockup. Enforce strict discipline in connection with the timing of installation and release of materials, to minimize the opportunity for theft and vandalism.

PART 17 - ENVIRONMENTAL PROTECTION

17.1 GENERAL

- A. Conduct construction activities by methods that comply with environmental regulations, minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result from the performance of work at the site. Avoid the use of tools and equipment which produce harmful noise. Restrict the use of noise making tools and equipment to hours of use that shall minimize complaints.

PART 18 - OPERATION, TERMINATION AND REMOVAL

18.1 GENERAL

- A. **Supervision:** Limit availability of temporary services and facilities to essential and intended uses to minimize waste and abuse. Do not permit temporary installation to be abused or endangered.
- B. **Maintenance:** Operate and maintain temporary services and facilities in good operating condition and in a safe and efficient manner until removal is authorized. Do not overload services or facilities. Protect from damage by freezing temperatures and similar elements. Do not allow unsanitary conditions, public nuisances or hazardous conditions to develop or persist on the site.
- C. 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 avoid the possibility of damage to the Work or to temporary facilities.

PART 19 - PROTECTION

19.1 GENERAL

- A. Maintain markers for underground lines. Protect from damage during excavation.

PART 20 - TERMINATION AND REMOVAL

20.1 GENERAL

- A. Remove each temporary service and facility promptly when need has ended, or when replaced by use of a permanent facility, but no later than Substantial Completion. Complete, or, if necessary, restore permanent work delayed because of interference with the temporary service or facility. Repair damaged work, clean exposed surfaces and replace work which cannot be repaired.
- B. Substantial Completion, clean and renovate permanent services and facilities that have been used to provide temporary services and facilities during the construction period.

END OF SECTION 01500

SECTION 01631 - PRODUCTS AND SUBSTITUTIONS

PART 1 - PROCEDURAL REQUIREMENTS

1.1 SOURCE LIMITATIONS

- A. To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work. Where it is possible to do so, match separate procurements as closely as possible. To the extent that the product selection process is under the Contractor's control, provide products that are compatible with previously selected products. Where standard products are available that comply with specified requirements, provide those standard products that have been used successfully before in similar applications, and that are recommended by the manufacturers for the applications indicated.

PART 2 - PRODUCT SELECTION LIMITATIONS

2.01 PRODUCT SELECTIONS

- A. Comply with the following requirements in the selection of products, materials and equipment:
1. Single Product Name: Where only a single product or manufacturer is named, provide the product, unless it is not available, is incompatible with existing work, or does not comply with specified requirements or governing regulations.
 2. Three or More Products Named: Where three or more products or manufacturers are named, the selection is at the Contractor's option, provided the product selected complies with specified requirements.
 - a. "Equivalent" Provisions: Where products or manufacturers are specified by name accompanied by the term "equivalent", provide either the product named, or comply with the requirements for gaining approval of "substitutions" for the use of an unnamed product.
 3. Compliance with Standards: Where specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting any product that complies with specified requirements provided no product names are indicated.
 4. Performance Requirements: Where the specifications require compliance with indicated performance requirements, the Contractor has option of selecting any product that complies with the specific performance requirements provided no product names are indicated.
 5. Visual Requirements: Where specifications indicate that a product is to be selected from the manufacturer's standard options, without naming the manufacturer, the Architect/Engineer has the option of making the

selection, after the Contractor has determined or selected the manufacturer.

2.2 NAMEPLATES

- A. Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's name-plates or trademarks on exposed surfaces of products which shall be exposed to view either in occupied spaces or on the exterior of the completed project.

PART 3 - SUBSTITUTIONS

3.1 CONDITIONS

- A. The Contractor's requests for substitutions shall be considered when they are reasonable, timely, fully documented, and when they qualify under one or more of the following circumstances:
1. The proposed substitution is related to an "equivalent" or similar provision in the Contract Documents.
 2. The required product cannot be supplied in time for compliance with Contract Time requirements.
 3. The required product is not acceptable to the governing authorities.
 4. The required product cannot be properly coordinated with other materials in the Work, or cannot be warranted or insured as specified.
 5. The proposed substitution shall offer a substantial advantage to the Owner after deducting offsetting disadvantages including delays, additional compensation to the Architect/Engineer for redesign, evaluation and other necessary services, and similar considerations.

3.2 SUBMITTALS

- A. Include the following information, as appropriate, in each request for substitution:
1. Provide complete product documentation, including Product Data and Samples, where appropriate.
 2. Provide detailed performance comparisons and evaluation, including testing laboratory reports where applicable.
 3. Provide coordination information indicating the effect of the substitution on other work and the time schedule.
 4. Provide cost information for the proposed Change Order.
 5. Provide the Contractor's general certification of the recommended substitution.

3.3 CHANGE ORDER

- A. Approval of substitutions is possible only by the Change Order or Supplemental Instructions procedure.

PART 4 - DELIVERY, STORAGE AND HANDLING

4.1 GENERAL

- A. Receive, store and handle products, materials and equipment in a manner that shall prevent loss, deterioration and damage. Schedule deliveries so as to minimize long-term storage at the project site.

END OF SECTION 01631

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SECTION 01700 - PROJECT CLOSE-OUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Close-out is hereby defined to include general requirements near end of Contract Time, in preparation for final acceptance, final payment, normal termination of contract, occupancy by Owner and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in sections of Division 2 through 16. Time of close-out is directly related to "Substantial Completion", and therefore may be either a single time period for entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this section.

1.3 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: Prior to requesting Architect's/Engineer's inspection for certification of Substantial Completion (for either entire work or portions thereof), complete the following and list known exceptions in request:
 1. In progress payment request coincident with or first following date claimed, show either 100% completion for portion of work claimed as "Substantially Complete", or list incomplete items, value of incompleteness, and reasons for being incomplete.
 2. Include supporting documentation for completion as indicated in these Contract Documents.
 3. Submit statement showing accounting of changes to the Contract Sum.
 4. Contractor shall notify and advise Owner of pending insurance change-over requirements.
 5. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.
 6. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where required) Occupancy Permits, operating certificates, and similar releases.
 7. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner.

8. Make final change-over of locks and transmit keys to Owner, and advise Owner's personnel of change-over in security provisions, obtain written receipt of delivery and forward copy to Architect.
9. Complete start-up testing of systems, and instructions of Owner's operating/maintenance personnel. Discontinue (or change over) and remove from project site temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.
10. Complete final cleaning up requirements, including touch-up of marred surfaces.
11. Touch-up and otherwise repair and restore marred exposed finishes.
12. Test and Balance of mechanical systems.

1.4 INSPECTION PROCEDURES

- A. Upon receipt of Contractor's request, Architect/Engineer shall either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, Architect/Engineer shall either prepare Certificate of Substantial Completion, or advise Contractor of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed. Contractor shall prepare a type written "punch-list" of items to be completed and attached to the Substantial Completion Form. Results of completed inspection shall form initial "punch-list" for final acceptance.

1.5 PREREQUISITES TO FINAL ACCEPTANCE

- A. General: Prior to requesting Architect's/Engineer's final construction review for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:
 1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 2. Submit updated final statement, accounting for additional (final) changes to Contract Sum.
 3. Submit certified copy of Architect's/Engineer's "final punch list" of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Architect/Engineer.
 4. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of time of Substantial Completion or when Owner took possession of and responsibility for corresponding elements of the work.
 5. Submit Consent of Surety.
 6. Submit final liquidated damages settlement statement, acceptable to Owner.
 7. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.

8. See Section 01712 Part 2 Close-Out Special Instructions complete and Notarized Statements on ACM/Hazardous Materials.
9. Submit all warranties/guarantees dated from Final Acceptance.

B. Review Procedure: Upon receipt of Contractor's notice that work has been completed, including punch-list items resulting from earlier construction reviews, and excepting incomplete items delayed because of acceptable circumstances, Architect/Engineer shall reinspect work. Upon completion of review, Architect/Engineer shall either prepare Certificate of Final Acceptance or advise Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure shall be repeated.

1.6 AS-BUILT DRAWINGS

- A. During the progress of the work, the Contractor shall require the Job Superintendent for the Project and the Job Superintendent for the Electrical Contractors to record on their field sets of drawings any approved alteration to Contract Drawings as installed and the exact locations, as installed, of all underground and otherwise concealed conduit, pipe and duct lines which were not installed exactly as shown on the Contract Drawings.
- B. With reference to Electrical work, the exact conduit runs shall be shown on these drawings.
- C. Upon completion of the work, this data shall be recorded to scale, by a competent draftsman on the contract drawings.
- D. Three full size prints reflecting changed and unchanged sheets shall be submitted to the Architect when completed for certification and forwarding to the Owner, at the time of project close-out.

1.7 RECORD SPECIFICATIONS

- A. Maintain one (1) copy of Specifications, including Addenda, Change Orders, Supplemental Instructions and similar modifications issued in printed form during construction, and mark-up variations (of substance) in actual work in comparison with text of specifications and modifications as issued. Give particular attention to substitutions, selection of options, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data, where applicable. Upon completion of mark-up, submit to Architect along with sepia line as-built plans referenced in Paragraph 1.06 of this specification section.

1.8 MAINTENANCE MANUALS

- A. Organize maintenance-and-operating manual information into suitable sets of manageable size, and bind into individual binders properly identified and indexed

(thumb-tabbed). Include emergency instructions, spare parts listing, warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data, and similar applicable information. Bind each manual of each set in a heavy-duty 2", 3-ring vinyl-covered binder, and include pocket folders for folded sheet information. Mark identification on both front and spine of each binder. Provide digital copy of the maintenance and operating manual in PDF format, tabbed the same as the hard copy binders. Digital copies shall be submitted on three USB drives.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION

3.1 CLOSE-OUT PROCEDURES

- A. General Operating/Maintenance Instructions: Arrange for each installer of work requiring continuing maintenance or operation, to meet with Owner's personnel, at project site, to provide basic instructions needed for proper operation and maintenance of entire work. Include instructions by manufacturer's representatives where installers are not expert in the required procedures. Review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrate start-up, shut-down, emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments, and similar operations. Review maintenance and operations in relation with applicable warranties, agreements to maintain, bonds, and similar continuing commitments.

3.2 FINAL CLEANING

- A. General: All cleaning shall be responsibility of General Services Contractor with exception of Special cleaning for specific units of work is specified in sections of Divisions 2 through 16. General cleaning during progress of work is specified in General Conditions and as temporary services in "Temporary Facilities" section of this Division. Provide final cleaning of the work, at time indicated, consisting of cleaning each surface or unit of work to normal "clean" condition expected for a first-class building cleaning and maintenance program. Comply with manufacturer's instructions for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required:
1. Remove labels which are not required as permanent labels.
 2. Clean transparent materials, including window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials. Replace broken glass and damaged transparent materials.
 3. Clean exposed exterior finishes and interior (if applicable) to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural

- weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
4. Wipe surfaces of mechanical and electrical equipment clean and remove excess lubrication and other substances.
 5. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, manholes, attics and similar spaces.
 6. Clean floors in job storage spaces broom clean.
 7. Vacuum clean carpeted surfaces and similar soft surfaces.
 8. Clean plumbing fixtures to a sanitary condition free of stains including those resulting from water exposure.
 9. Clean light fixtures and lamps so as to function with full efficiency.
 10. Clean project site (yard and grounds), including landscape development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petro-chemical spills and other foreign deposits. Rake grounds which are neither planted nor paved, to a smooth, even-textured surface.
 11. Clean and finish resilient flooring per specifications.
- B. Removal of Protection: Except as otherwise indicated or requested by Architect/Engineer, remove temporary protection devices and facilities which were installed during course of the work to protect previously completed work during remainder of construction period.
- C. Compliance: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at site, or bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from site and dispose of in a lawful manner.
1. Where extra materials of value are remaining after completion of associated work have become Owner's property, dispose of these to Owner's best advantage as directed.

END OF SECTION 01700

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SECTION 16000- ELECTRICAL GENERAL REQUIREMENTS

1.0 GENERAL

1.01 SECTION INCLUDES:

- A. Electrical General Requirements specifically applicable to Division 16 Sections, in addition to Division 1 - General Requirements.

1.02 PROJECT/SITE CONDITIONS:

- A. Install work in locations shown on Drawings, unless prevented by project conditions.
- B. Prepare drawings showing proposed rearrangement of work to meet project conditions, including changes to work specified in other Sections. Obtain permission of Engineer before proceeding.
- C. Before submitting a proposal for the work contemplated in these specifications and accompanying Drawings, each bidder shall examine the site and familiarize himself with all the existing conditions and limitations. No additional compensation will be allowed because of the Contractor's misunderstandings as to the amount of work involved or his lack of knowledge of any condition in connection with the work.

1.03 REGULATORY REQUIREMENTS:

- A. Permits and Inspections: This Contractor shall secure and pay for all permits, and inspections required on work performed under this section of the Specifications. He shall assume full responsibility for all assessments and taxes necessary for the completion and acceptance of the work.
- B. Applicable Standards and Codes: All materials and workmanship shall comply with all applicable codes, specifications, local ordinances, industry standards and utility company regulations. In case of difference between building codes, specifications, federal and state laws, local ordinances, industry standards and utility company regulations and the Contract Documents, the most stringent requirements shall govern. The Contractor shall promptly notify the Engineer in writing of such differences. Should the Contractor perform any work that does not comply with the requirements of the applicable building codes, federal and state laws, local ordinances, industry standards and utility company regulations, he shall bear all costs arising in correcting the deficiencies. Applicable codes and standards shall include all State laws, State Board of Health and State Rating Bureau, local ordinances, utility company regulations and the applicable requirements of the following:
 - 1. Standard Building Code

2. National Fire Protection Association - NFPA
3. National Electrical Manufacturers Association - NEMA
4. National Bureau of Standards
5. American National Standards Institute - ANSI
6. Underwriters' Laboratories - UL

1.04 COOPERATION:

- A. Cooperate with others in laying out the electrical work so that this phase of the work will properly fit the building and other contractor's requirements.

1.05 PRODUCTS FURNISHED BY OTHERS:

- A. Products are furnished by the Owner or under other Divisions of these Specifications that require electrical connection. This Contractor shall provide all necessary materials and labor to connect to the electrical system all equipment and fixtures having electrical power connection requirements. Refer to other Divisions of these Specifications for additional or specific requirements. Actual rough-in dimensions shall be obtained from Shop Drawings or measurements of the equipment or fixture.
- B. The unpacking, assembling and setting of equipment furnished by the Owner or under other Divisions of these Specifications will be performed by others, unless stated otherwise.
- C. Because the manufacturer of the equipment actually purchased or supplied may vary slightly from that specified, as hereinbefore stated, some rearranging of the requirements may be necessary. This Contractor shall make connections as required by the actual equipment furnished.

1.06 SEQUENCING AND SCHEDULING:

- A. Construct work in sequence under provisions of applicable sections of these specifications.
- B. Power outages shall be scheduled with the Owner and other Contractors. Outages shall be at the convenience of the Owner.

1.07 APPROVAL OF MATERIALS AND EQUIPMENT:

- A. Whenever a material, article, or piece of equipment is identified on the Drawings or in these Specifications by reference to manufacturer's or vendor's name, trade name, catalog number or the like, it is so identified for the purpose of establishing a standard of quality and shall not be construed as limiting competition. Any material, article, or piece of equipment of other manufacturers or vendors, which will perform adequately the intent of the design, will be considered equally acceptable provided written approval has been granted by the Engineer. Materials submitted for

approval shall comply with all applicable Sections of these Specifications prior to acceptance. Submit proposed substitutions to the Architect for approval at least ten (10) days prior to the bid so that an addendum can be issued to all contractors. Engineer's opinion shall be final on the equality of substituted items.

- B. After the Contract has been awarded, catalog cuts on the following items shall be submitted to the Architect/Engineer for final approval before purchase of the equipment whether substitutions are being made or not:

1. Light Fixtures
2. Panelboards and Switchboards
3. Distribution Equipment
4. Wiring Devices
5. Fabricated Equipment
6. Automatic Transfer Switches

1.08 OBSERVATION, TESTING AND BALANCING:

- A. Observation: The complete job will be, during and/or after construction, subject to the administration of the Engineer. Site visits shall be conducted by the Architect/Engineer or his designated representative as necessary to maintain compliance with the Contract requirements.
- B. Testing: Prior to acceptance by the Owner/Engineer, the Contractor shall conduct and record insulation tests of all feeder and motor branch circuits. The insulation testing shall be accomplished utilizing an meg-ohm meter. Verification of test results shall be witnessed by the Architect or his designated representative. The Contractor shall submit a written report of all readings of each feeder and circuit.
- C. Balancing: All branch circuits and feeders shall be tested under maximum and typical load conditions, and loads shall be balanced on the phases of the electrical system. The Contractor shall submit written report of final load readings of all loads on each feeder.

1.09 WORKMANSHIP:

- A. All work shall be executed in a neat and substantial manner by skilled workman, well qualified, and regularly engaged in the type of work required. Substandard work shall be removed and replaced by the Contractor at no cost to the Owner.

1.10 OPERATING AND MAINTENANCE INSTRUCTIONS/AS BUILT DRAWINGS:

- A. Four (4) complete sets of instructions containing the manufacturer's operating and maintenance instructions for each piece of equipment shall be furnished to the Owner. Each set shall be permanently bound and shall have a hard cover. One

complete set shall be furnished at the time that the test procedure is submitted, and remaining sets shall be furnished before the Contract is completed. Flysheets shall be placed before instructions covering each subject. The instruction sheets shall be approximately 8-1/2" by 11" with large sheets of Drawings folded in. The instructions shall include information for major pieces of equipment and systems.

- B. Upon completion of the work and at the time designated, the services of one project engineer shall be provided by the Contractor to instruct the representative of the Owner in the operation and maintenance of the systems.
- C. This Contractor shall provide as-built Drawings at the completion of the job. Drawings shall show all significant changes in equipment, wiring, routing, location, etc.

1.11 GUARANTEE:

- A. This Contractor shall guarantee to the Owner, all work performed under this contract to be free from defects in workmanship and material for a period of one year from date of final acceptance by Owner and Architect. Any defects arising during this period will be promptly remedied by the Contractor without cost to the Owner. Lamps and fuses burned out during normal operation after acceptance are exempt from guarantee. This Contractor shall furnish the Owner with an estimated time, from notification of a problem to presence on the site, for all service calls on warranty items.

1.12 COMPLIANCE:

- A. In the event of a conflict between Specifications, Drawings, Codes, Requirements, etc., the most stringent requirements shall govern.
- B. The interpretation of conflicts and resolution thereof shall remain the right of the Architect/Engineer or his designated representative.

PART 2 - PRODUCTS: Not Used

PART 3 - EXECUTION: Not Used

End of Section

SECTION 16100 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS, CABLES,
AND DEVICES

1.0 GENERAL

1.01 RELATED DOCUMENTS:

- A. Section 16000 - Electrical General Requirements, apply to the work specified in this Section, with additions and modifications specified herein.

1.02 SECTION INCLUDES:

- A. Wire and Cable
- B. Wiring Devices

2.0 PRODUCTS

2.01 WIRE AND CABLE

A. Building Wire:

1. Feeder and Branch Circuits 10 AWG and Smaller: Copper, solid conductor, 600 volt insulation, rated 75 degrees C, THHN/THWN.
2. Feeder and Branch Circuits 8 AWG and 6 AWG: Copper, stranded conductor, 600 volt insulation, rated 75 degrees C, THHN/THWN.
3. Feeder and Branch Circuits Larger Than 6 AWG: Copper, stranded conductor, 600 volt insulation, rated 75 degrees C, THW.
4. Control Circuits: Copper, stranded conductor, 600 volt insulation, THHN/THWN.

NOTE: The use of Romex cable is not allowed on this project. Aluminum wire may be used for feeder conductors provided the local AHJ and owner approves and the minimal allowable ampacity (as specified) is met. 'MC' cable allowed for connection between panels and dry-type transformers only.

B. Remote Control Signal Cable (where applicable):

1. Control Cable for Class 1 Remote Control and Signal Circuits: Copper conductor, 600 volt insulation, rated 60 degree C, individual conductors twisted together, shielded, and covered with PVC jacket.

2. Control Cable for Class 2 or Class 3 Remote Control and Signal Circuits: Copper conductor, 300 volt insulation, rated 60 degree C, individual conductors twisted together, shielded, and covered with PVC jacket; UL listed.
- C. Cords: Oil-resistant thermoset-insulated multi-conductor flexible cord with identified equipment grounding conductor, suitable for extra hard usage in damp locations, type SO.

2.02 WIRING DEVICES AND WALL PLATES:

- A. Manufacturers:
 1. Hubbell
 2. Leviton
 3. Arrow Hart
- B. Wall Switches: AC general use, quiet-operating snap switch rated 20 amperes and 120/277 volts AC, with plastic toggle handle, ivory color.
 1. Single Pole Switch: Hubbell 1221-I
 2. Three Way Switch: Hubbell 1223-I
- C. Receptacle:
 1. Convenience Receptacle Configuration: Type 5-20R, plastic face, **ivory color**. Model 5262-I manufactured by Hubbell.
 2. Specific Purpose Receptacle: Configuration indicated on Drawings with black plastic face.
 3. Provide straight-blade receptacles to NEMA WD 1.
 4. Provide straight-blade receptacles to NEMA WD 5.
 5. GFCI Receptacles: Duplex convenience receptacle with integral ground fault current interrupter. Model GFR-5352IA manufactured by Hubbell. Device shall be compliant to the requirements of UL 943.
- D. Wall Dimmer: Rotary dial or slide type, **color by architect**. Model C-2000 manufactured by Lutron.(or Leviton equal) Rating of 2000 watts at 120 volts, AC.
- E. Decorative Cover Plate: Smooth Stainless steel, **color by architect**, ANSI 302.
- F. Weatherproof Cover Plate: Gasketed cast metal with hinged gasketed device covers **rated raintight while in use** in accordance with Article 410-57 of the National Electrical Code.

- G. Attachment Plug Cap: Match receptacle configuration provided for equipment connection.
- H. Cord Reels: Provide cord reels as indicated on the drawings. Cords shall be sized per loads served and shall be 50' in length.

3.0 EXECUTION

3.01 EXAMINATION AND PREPARATION:

- A. Verify that interior of building has been physically protected from weather.
- B. Verify that mechanical work which is likely to injure conductors has been completed.
- C. Completely and thoroughly swab raceway system before installing conductors.

3.02 INSTALLATION:

A. Wiring Methods:

1. Concealed Interior Locations: Building wire in raceway.
2. Exposed Interior Locations: Building wire in raceway.
3. Above Accessible Ceilings: Building wire in raceway.
4. Wet or Damp Interior Locations: Building wire in raceway.
5. Exterior Locations: Building wire in raceway.
6. Underground Locations: Building wire in raceway.
7. Hazardous Locations: Building wire in raceway conforming to applicable NEC Articles as identified on the Drawings.

- B. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 14 AWG for control wiring. Conductors shall be sized to compensate for voltage drop.
- C. Neatly train and secure wiring inside boxes, equipment and panelboards.
- D. Use UL listed wire pulling lubricant for pulling conductors in raceways.
- E. Make splices, taps, and terminations to carry full ampacity of conductors without perceptible temperature rise.

- F. Devices shall mount flush or as indicated on the Drawings.
- G. Install wiring devices in accordance with manufacturer's instructions.
 - 1. Install wall switches 48 inches above floor, "OFF" position down.
 - 2. Install wall dimmers 48 inches above floor. De-rate ganged dimmers as instructed by manufacturer. Do not use a common neutral, provide a separate neutral for each dimmed circuit.
 - 3. Unless noted otherwise, install convenience receptacles 18 inches above floor, 6 inches above counters or splashbacks, with grounding pole on bottom.
 - 4. Install GFCI receptacles at all outdoor locations and all indoor locations as required by NFPA70, and as indicated.
 - 5. Install specific purpose receptacles at heights shown on Drawings.
 - 6. Install cord and attachment plug caps on equipment under the provisions of Section 16100. Size cord for connected load and rating of branch circuit over-current protection.
- K. Install wall plates flush and level.
 - 1. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
 - 2. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.
 - 3. Install weatherproof coverplates on all devices/boxes in wet or outdoor locations.

3.03 FIELD QUALITY CONTROL:

- A. Perform field inspection and testing of circuits under provisions of Section 16000.
 - 1. Inspect wire and cables for physical damage and proper connection.
 - 2. Torque test conductor connections and terminations to manufacturer's recommended values.
 - 3. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

END OF SECTION

SECTION 16200 - RACEWAY SYSTEMS

1.0 GENERAL

1.01 RELATED DOCUMENTS:

- A. Section 16000 - Electrical General Requirements, apply to the work specified in this section, with additions and modifications specified herein.

1.02 SECTION INCLUDES:

- A. Conduit and Conduit Fittings
- B. Electrical Boxes and Fittings
- C. Cable Tray

2.0 PRODUCTS

2.01 CONDUIT AND FITTINGS:

A. Conduit:

1. Metal Rigid Conduit: Galvanized steel.
2. Metal Tubing: Galvanized steel.
3. Flexible Conduit: Steel.
4. Liquid-Tight Flexible Conduit: Flexible conduit with PVC Jacket.
5. Plastic Conduit and Tubing: NEMA TC 2; PVC. Use Schedule 40 conduit.

B. Conduit and Fittings:

1. Conduit Fittings and Conduit Bodies: NEMA FB 1. Conduit fittings to be steel, threaded type. Split couplings are not acceptable.
2. Tubing Fittings: NEMA FB 1. Tubing fittings to be steel compression type for conduit up to 2" in diameter and set screw type for conduit 2-1/2" and larger.
3. Flexible Conduit Fittings: NEMA FB 1. Flexible conduit fittings to be steel set screw or screw in type.
4. Liquid-Type Flexible Conduit Fittings: NEMA FB 1. Liquid-tight flexible conduit fittings to be steel compression type.
5. Plastic Fittings and Conduit Bodies: NEMA TC 3.

2.02 ELECTRICAL BOXES:

A. Boxes:

1. Sheet Metal: NEMA OS 1; galvanized steel, 4" or 4-11/16" square. Provide galvanized plaster/tile ring for recessed outlet boxes.
2. Cast Metal: Aluminum or cast ferrous alloy, deep type, gasketed cover, threaded hubs.
3. Nonmetallic: NEMA OS 2.

B. Large Enclosures: NEMA 250; Type 4, steel enclosures with manufacturer's standard enamel finish and cover, held closed screws.

2.03.1 CABLE TRAY (where applicable):

A. Manufacturers:

1. B-line
2. Mono-Systems

B. Ladder type, constructed of aluminum with 9" rung spacing, 6" siderails and 18" wide

C. Fittings: Horizontal 90° elbows, horizontal tees, and horizontal crosses with all metal accessories to connect to straight sections.

D. Support: Supports shall be fabricated channel, and threaded rods.

E. Grounding: Provide grounding straps as each junction, splice, fitting, etc.

3.0 EXECUTION

3.01 EXAMINATION AND PREPARATION:

- A. Examine supporting surfaces to determine that surfaces are ready to receive work.
- B. Electrical boxes shown on Contract Drawings are approximate locations unless dimensioned.

3.02 INSTALLATION:

A. Use conduit and tubing for raceways in the following locations:

1. Underground Installations: Rigid steel conduit, painted with two coats of epoxy asphaltum paint, or Schedule 40 PVC conduit.
2. Installations In Concrete: Rigid steel conduit, or Schedule 40 PVC conduit.
3. In Slab Above Grade: Rigid steel conduit, or Schedule 40 PVC conduit. Where

likely to be damaged, use Schedule 80 PVC in lieu of Schedule 40 PVC.

4. Exposed Outdoor Locations: Rigid steel conduit or Schedule 40 PVC. Schedule 80 PVC to be used in areas prone to damage.
 5. Wet Interior Locations: Rigid steel conduit or electrical metallic tubing. Use threaded or raintight fittings for conduit.
 6. Concealed Dry Interior Locations: Rigid steel conduit or electrical metallic tubing.
 7. Exposed Dry Interior Locations: Rigid steel conduit or electrical metallic tubing.
 8. Feeders: Galvanized rigid steel conduit and PVC conduit on all feeders. Schedule 40 PVC may be used in environments where there is an unlikely probability that the conduit will be damaged. Otherwise, use schedule 80 PVC if RMC is not used.
- B. Size raceways for conductor type installed.
1. Minimum Size Conduit: 1/2 inch.
- C. Arrange conduit and tubing to maintain headroom and to present a neat mechanical appearance.
1. Route exposed raceway parallel and perpendicular to walls and adjacent piping.
 2. Maintain minimum 6 inch clearance to piping and 12 inch clearance to heat surfaces such as flues, piping, and heating appliances.
 3. Maintain required fire, acoustic, and vapor barrier rating when penetrating walls, floors, and ceilings.
 4. Route conduit through roof openings for piping and ductwork where possible; otherwise, route through roof jack with pitch pocket.
 5. Group in parallel runs where practical. Use rack constructed of steel channel. Maintain spacing between raceways or de-rate circuit ampacities to NFPA 70 requirements.
 6. Use approved manufactured conduit hangers and clamps; do not fasten with wire or perforated pipe straps. Utilize conduit hangers for conduits located below floor slabs.
 7. Use conduit bodies to make sharp changes in direction.
 8. Terminate all conduits with insulated bushings.
 9. Use suitable caps to protect installed raceway against entrance of moisture and dirt.
 10. Provide a pull string in all empty raceways.
 11. Install expansion joints fittings where raceway crosses building expansion joints.

12. Install plastic conduit and tubing in strict accordance with the manufacturer's recommendations. When plastic conduit is installed, use galvanized rigid elbows for 90E bends.
- D. Install electrical boxes as shown on the Drawings, and as required for splices, taps, wire pulling, equipment connections and regulatory requirements.
1. Use cast outlet box in exterior locations, wet locations, and exposed interior locations.
 2. Use large enclosure for interior pull and junction boxes larger than 12 inches in any dimension.
 3. Locate and install electrical boxes to allow access. Provide access panels if required.
 4. Locate and install electrical boxes to maintain headroom and to present a neat mechanical appearance.
 5. Install pull boxes and junction boxes above accessible ceilings or in unfinished areas.
 6. Provide knockout closure for unused openings.
 7. Align wall-mounted outlet boxes plumb and level for switches, and similar devices.
 8. Coordinate mounting heights and locations of outlets above counters and backsplashes.
 9. Install lighting outlets to locate luminaires as shown on the Drawings.
- E. Use recessed outlet boxes in finished areas where indicated.
1. Secure boxes to interior wall and partition studs, accurately positioning to allow for surface finish thickness, and plaster/tile ring installation.
 2. Use stamped steel stud bridges for flush outlets in hollow stud wall, and adjustable steel channel fasteners for flush ceiling outlet boxes.
 3. Locate boxes in masonry walls to require cutting corner only. Coordinate masonry cutting to achieve neat openings for boxes.
 4. Do not install boxes back-to-back in walls; provide 6 inch separation, minimum. In acoustic-rated walls provide 24 inch separation minimum.
 5. Do not damage insulation.

END OF SECTION

SECTION 16300 - SERVICE AND DISTRIBUTION

1.0 GENERAL

1.01 RELATED DOCUMENTS:

- A. Section 16000 - Electrical General Requirements, apply to the work specified in this Section, with additions and modifications specified herein.

1.02 SECTION INCLUDES:

- A. System Description
- B. Utility Requirements
- C. Grounding
- D. Switchboards
- E. Panelboards
- F. Enclosed Switches
- G. Fuses
- H. Transformers
- I. Enclosed Circuit Breakers
- J. Plug-in Duct

1.03 SYSTEM DESCRIPTION:

- A. Existing electrical service(s) to remain.

1.04 PROJECT CONDITIONS:

- A. Verify field measurements for the equipment to ensure proper fit within the space proposed.

1.05 UTILITY REQUIREMENTS:

- A. The serving utility is customer-owned.
- B. Metering shall be provided by the utility company and installed by the electrical contractor.

2.0 PRODUCTS

2.01 SWITCHBOARD:

A. Manufacturers:

1. Square D Company
2. Cutler-Hammer
3. Siemens
4. General Electric

B. Switchboard: NEMA PB2.

1. Line and Load Terminations: Accessible from front only of switchboard, suitable for conductor materials used.
2. Main Sections Devices: Individually mounted.

C. Ratings: As shown on Drawings.

D. Bussing:

1. Bus Material: Copper or Aluminum with tin plating sized in accordance with NEMA PB2.
2. Bus Connections: Accessible from front for maintenance.
3. Ground Bus: Copper

E. Enclosure: Type 1 General purpose as shown on the Drawings.

1. Align sections at front and rear.
2. Height: 90 inches
3. Finish: Manufacturer's standard light gray enamel over external surfaces.

F. Future Provisions:

1. Fully equip spaces for future devices with bussing and bus connection provisions; continuous current rating as indicated on the Drawings.
2. Do not taper main bus rating.

G. Switching and Over-Current Protection Devices:

1. Molded Case Circuit Breakers: NEMA AB 1.
2. Solid State Molded Case Circuit Breakers: NEMA AB 1; with electronic sensing,

timing and tripping circuits for adjustable current settings; ground fault trip; instantaneous trip and adjustable short time trip.

H. Switchboard Instruments:

1. Ground Fault Sensors: Zero sequence type.
2. Ground Fault Relay: Adjustable ground fault sensitivity from 200 to 1200 amperes, time delay adjustable from 0 to 1 second.
3. Square D Power Logic metering.

2.02 PANELBOARDS:

A. Manufacturers:

1. Square D Company Only...No Equals Accepted!

B. Distribution Panelboards: NEMA PB 1; circuit breaker type.

1. Enclosures: Type 1 or 3R as shown on Drawings.
2. Mounting: Surface or flush mount as shown on Drawings.
3. Bus: Copper.
4. Ground Bus: Copper
5. Voltage and phase: As shown on Drawings.
6. Minimum Integrated Equipment: As shown on Drawings.
7. Hinged door with lock.
8. Circuit Breakers: Bolt-on, ratings as shown on Drawings.

C. Light and Power Panelboards: NEMA PB 1; circuit breaker type.

1. Enclosures: Type 1 or 3R as shown on Drawings.
2. Surface or flush mount as shown on Drawings.
3. Bus: Copper.
4. Ground Bus: Copper.
5. Voltage and phase as shown on Drawings.
6. Minimum Integrated Equipment: As shown on Drawings.

7. Hinged door with lock.
8. Circuit Breakers: Bolt-on, ratings as shown on Drawings.

D. Accessories: Provide panel and branch device accessories as shown on Drawings.

E. Future Provisions: Where space provisions are indicated on the Drawings provide bussing, bus extensions, etc. require to mount future circuit breakers. Where spare provisions are indicated on the Drawings provide circuit breakers complete and ready for connection.

2.03 ENCLOSED SWITCHES:

A. Manufacturers:

1. Square D Company only...No Equals Accepted!

B. Enclosed Switch Assemblies: NEMA KS 1; Type HD.

1. Fuse Clips: Designed to accommodate Class `R' or `J' fuses as shown on Drawings.

C. Enclosures: NEMA KS 1; Type 1, 3R, and 4X as required.

D. Ground: Provide grounding lug.

E. Ratings: 600 or 250 volts to match system service requirements, poles and ampere ratings as indicated on the Drawings.

2.04 FUSES:

A. Manufacturers:

1. Bussman
2. Shawmut
3. Little Fuse

B. Service Entrance/Feeder Circuits-601 Amp and Larger

1. Current Limiting
2. UL Class L
3. 200,000 Ampere RMS Interrupting Rating
4. Voltage Rating: As required for system compatibility.

- C. Service Entrance/Feeder Circuits-600 Amp and Smaller
 - 1. Current Limiting
 - 2. UL Class RK1
 - 3. 200,000 Ampere RMS Interrupting Rating
 - 4. Voltage Rating: As required for system compatibility
- D. Motor, Motor Controller, Transformer and Inductive Circuits
 - 1. Current Limiting
 - 2. UL Class RK1, Time Delay
 - 3. 200,000 Ampere RMS Interrupting Rating
 - 4. Voltage Rating: As required for system compatibility.

2.05 TRANSFORMERS:

- A. Manufacturers:
 - 1. Square D Company
 - 2. ITE-Siemens
 - 3. General Electric Company
 - 4. Cutler Hammer
- B. Description: Enclosed air-cooled dry type transformer.
- C. Ratings:
 - 1. Primary Voltage: As shown on Drawings.
 - 2. Secondary Voltage: As shown on Drawings.
 - 3. Capacity: KVA ratings as shown on Drawings.
 - 4. Basic Impulse Level: 10 BIL.
 - 5. Insulation Class/Temperature Rise: Class 220/115 degrees C.
- D. Configuration: Two winding, delta-wye.

- E. Winding Taps: Four full capacity primary taps, each at 2.5 percent below rated voltage; and two full capacity primary taps, each at 2.5 percent above rated voltage.
- F. Mounting: Wall, floor, or trapeze as shown on Drawings.
- G. Enclosures: Code gauge steel, NEMA 1 or 3R as required.

2.06 ENCLOSED CIRCUIT BREAKERS:

- A. Manufacturers:
 - 1. Square D Company only...No Equals Accepted!
- B. Circuit Breaker: NEMA AB 1.
 - 1. Voltage: As shown on Drawings.
 - 2. Enclosure: NEMA AB 1; Type 1 or 3R as required.
 - 3. Accessories: As indicated on Drawings.

2.07.1 PLUG-IN DUCT

- A. Manufacturers:
 - 1. Square D Company
 - 2. ITE-Siemens
 - 3. General Electric
 - 4. Cutler Hammer
- B. Plug-in Duct
 - 1. Bus Material: Copper
 - 2. Enclosure: NEMA 1
 - 3. Mounting: Suspended from structure
 - 4. Rating: 225 amperes, 600 volt, 3 phase, 4 wire
- C. Plug-in Units
 - 1. Fusible switches

3.0 EXECUTION

3.01 EXAMINATION AND PREPARATION:

- A. Make arrangements with utility company to obtain permanent electrical service to the facility.

3.02 INSTALLATION:

- A. Install utility services in accordance with utility company standards and requirements.
 - 1. Underground Service: Refer to 'Power Riser Diagram' for details. (Verify with utility prior to bid/construction.)
- B. Install equipment in accordance with manufacturer's instructions.
- C. Install switchboard to NEMA PB 2.1.
- D. Install panelboards to NEMA PB 1.1.
- E. Ground the electrical service in accordance with NFPA 70, National Electrical Code, Article 250.
- F. Provide labels for all switchboards, panelboards, and distribution equipment.
- G. Provide typewritten directory inside panel door for all panelboards.

END OF SECTION

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SECTION 16400 - BASIC ELECTRICAL MATERIALS AND METHODS

1.0 GENERAL

1.01 RELATED DOCUMENTS:

- A. Section 16000 - Electrical General Requirements, apply to the work specified in this Section, with additions and modifications specified herein.

1.02 SECTION INCLUDES:

- A. Grounding and Bonding
- B. Supports
- C. Identification
- D. Connection of Equipment
- E. Excavation, Trenching, and Backfilling
- F. Cleaning and Painting
- G. Cutting and Patching

1.03 PROJECT CONDITIONS:

- A. Existing project conditions indicated on Drawings are based on casual field observation and existing record documents.
- B. Verify field measurements and circuiting arrangements as shown on the Drawings.
- C. Report discrepancies to Engineer before disturbing existing installation.

2.0 PRODUCTS

2.01 GROUNDING MATERIALS:

- A. Ground Rod: Copper clad steel, 3/4 inch in diameter x 10 feet in length.
- B. Mechanical Connectors: Cast bronze construction with matching bolt, nuts, and washers.
- C. Exothermic Welds: Materials shall be from the same source. Materials shall be Cadweld or approved equal.
- D. Conductors: Insulated type complying with applicable Sections of these Specifications or bare soft drawn copper as indicated.

2.02 SUPPORTS:

- A. Fabrication Steel: Galvanized or painted steel of standard shapes and sizes.
- B. Manufactured Channel: Hot dipped galvanized with all hardware required for mounting as manufactured by Unistrut, Kindorf, or Powerstrut.
- C. Miscellaneous Hardware: Standard sizes treated for corrosion resistance.

2.03 IDENTIFICATION:

- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Wire and Cable Markers: Cloth type, split sleeve type, or tubing type.
- C. Panel Directories: Typewritten under plastic cover.

3.0 EXECUTION

3.01 INSTALLATION:

- A. Install Products in accordance with manufacturer's instructions.
- B. Except where specifically indicated otherwise, all exposed non-current-carrying metallic parts of electrical equipment, metallic raceway systems, and service neutral of the electrical system shall be grounded.
 - 1. Equipment grounding shall be accomplished by installing a separate grounding conductor in each raceway of the system. The Conductor shall be provided with a distinctive green insulation or marker and shall be sized in accordance with Table 250-122 of the National Electrical Code for circuit ampacity ratings.
 - 2. The electrical system grounding electrode shall be made at the main service equipment and shall be extended to the point of entrance of the metallic cold water service. Ground to be sized in accordance with Table 250-66 of the National Electrical Code. Connection to the water pipe shall be made by a suitable ground clamp. If flanged pipes are encountered, connection shall be made on the street side of the flange connection. If the metallic water service is coated with an insulating material or there is no metallic water service to the building, ground connection shall be made to ground rods at the exterior of the building driven full length into the earth. The maximum resistance of the driven ground shall not exceed 25 ohms under normally dry conditions. If this resistance cannot be obtained with a single rod, additional rods shall be installed not less than 6 feet on centers, or if sectional type rods are used, additional sections may be coupled together and driven with the first rod. The resultant resistance shall not exceed 25 ohms measured not less than 48 hours after rainfall.
 - 3. Ground all building steel including reinforcing bars in concrete and all piping entering the building from outside. Where applicable, see Section 16900 for additional requirements.
- C. Make electrical connections to equipment in accordance with equipment manufacturer's

instructions.

1. Verify that wiring and outlet rough-in work is complete and that equipment is ready for electrical connection, wiring, and energization.
 2. Make wiring connections in control panel or in wiring compartment of pre-wired equipment. Provide interconnecting wiring as required by equipment manufacturer.
 3. Install and connect disconnect switches, controllers, control stations, and control devices as required by equipment manufacturer.
 4. Make conduit connections to equipment using flexible conduit. Use liquid-tight flexible conduit in damp or wet locations.
 5. Install pre-fabricated cord set where connections with attachment plug is indicated or specified, or use attachment plug with suitable strain-relief clamps.
 6. Provide suitable strain-relief clamps for cord connections to outlet boxes and equipment connection boxes.
- D. Install support systems sized and fastened to accommodate weight of equipment and conduit, including wiring, which they carry.
1. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using precast insert system, expansion anchors, preset inserts, beam clamps, or spring steel clips.
 2. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster, or gypsum board partitions and walls; expansion anchors or preset inserts in solid masonry walls; self-drilling anchors or expansion and anchors on concrete surfaces; sheet metal screws in sheet metal studs; and wood screws in wood construction.
 3. Do not fasten supports to piping, ceiling support systems, ductwork, mechanical equipment, conduit, etc.
 4. Do not use powder-actuated anchors.
 5. Do not drill structural steel members.
 6. Fabricate supports from structural steel or steel channel.
 7. Install surface mounted cabinets and panelboards with minimum of four anchors.
 8. Provide steel channel supports to stand cabinets one inch off wall in wet locations.
 9. Bridge studs top and bottom with channels to support flush mounted cabinets and panelboards in stud walls.
 10. Install free-standing electrical equipment on 4 inch high concrete pads.
- E. Identify electrical distribution and control equipment, and loads served, to meet regulatory

requirements and as specified herein.

1. Degrease and clean surface to receive nameplates.
 2. Secure nameplates to equipment fronts using screws or rivets with edges parallel to equipment lines.
 3. Use nameplates with 1/4 inch lettering to identify Switchboard, Panelboards, Safety Switches, Motor Starters and Branch Devices of Switchboards.
 4. Panel directories shall accurately indicate load served and location of load.
 5. Engrave plates as indicated by Schedules on the Drawings.
- F. Install wire markers on each conductor in panelboard gutters, boxes, and at load connections.
1. Use distribution panel and branch circuit or feeder number to identify power and lighting circuits.
 2. Use control wire number as indicated on schematic and interconnection diagrams or equipment manufacturer's shop drawings to identify control wiring.
- G. Excavating, trenching, and backfilling shall be accomplished as indicated on the Drawings or where required to install systems and/or equipment.
1. Trenches for all underground conduits or equipment shall be excavated to the required depths. Where soft, wet, or unstable soil is encountered, the bottom of the trench shall be filled with 6 inches of compacted gravel and sand fill. All trench bottoms shall be tamped hard. Trenches shall be shored as required to meet OSHA requirements and general safe working conditions.
 2. After conduits or equipment have been inspected and approved by the Architect and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all trash and debris. Material for backfilling shall consist of the excavation, or borrow of sand, gravel, or other materials approved by the Architect and shall be free of trash, lumber, or other debris. Backfill shall be placed in horizontal layers, not exceeding 9 inches in depth and properly moistened to approximate optimum requirements. Each layer shall be compacted by hand or machine tamped to a density equivalent to surrounding soil.
- H. Cleaning and Painting: The respective Contractors for the various phases of work shall clear away all debris, surplus materials, etc., resulting from their work or operations, leaving the job and equipment furnished in the clean first class condition.
1. All fixtures and equipment shall be thoroughly cleaned of plaster, stickers, rust, stains and other foreign matter or discoloration, leaving every part in an acceptable condition ready for use.
 2. The Contractor shall refinish and restore to the original condition and appearance, all electrical equipment which has sustained damage to manufacturer's prime and finish

coats or enamel or paint. Materials and workmanship shall be equal to the requirements described for other painting.

- I. Cutting and Patching: This Contractor shall provide all cutting, digging, etc., incident to his work and shall make all required repairs thereafter to the satisfaction to the Engineer, but in no case shall the Contractor cut into any major structural element, beam, or column without written approval of the Engineer.
 1. Pavements, sidewalks, roads, curbs, walls, ceilings, floors, and roofs shall be cut, patched, repaired and/or replaced as required to permit the installation of the electrical work.
 2. The Contractor shall bear the expense of all cutting, patching, painting, repairing, or replacing of the work of other trades required because of his fault, error, or tardiness or because of any damage done by him.

END OF SECTION

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SECTION 16700 - SURGE PROTECTION FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS

I. GENERAL

1.01 RELATED SECTIONS

- A. The Contractor shall furnish and install the Transient Voltage Surge Suppression (TVSS) equipment having the electrical characteristics, ratings and modifications as specified herein and as shown on the contract drawings. Refer to related sections for surge requirements in:

1.02 RELATED SECTIONS

- a) Section 16300 -- Panelboards

1.03 REFERENCES.

The TVSS units and all components shall be designed, manufactured and tested in accordance with the latest applicable UL Listed standards (UL 1449, 2nd Edition), UL 1283 and CSA certified per CSA 22.2

1.04 SUBMITTALS

- A. The following information shall be submitted to the Engineer:
 - 1. Provide verification that the TVSS device complies with the required UL 1449 2nd Edition and CSA approvals.
 - 2. Provide actual let through voltage test data in the form of oscillograph results for the ANSI/IEEE C62.41 Category C3 & C1 (combination wave) and B3 (ringwave) tested in accordance with ANSI/IEEE C62.45.
 - 3. Provide spectrum analysis of each unit based on MIL-STD-220A test procedures between 50 kHz and 200 kHz verifying the device's noise attenuation exceeds 41 dB at 100 kHz.
 - 4. Provide test report from a recognized independent testing laboratory verifying the suppressor components can survive published surge current rating on both a per mode and per phase basis using the IEEE C62.41, 8 x 20 microsecond current wave. Note that test data on individual module is not accepted.
- B. Submit five (5) copies of the above information.

1.05 SUBMITTALS – FOR INFORMATION:

When requested by the Engineer the following product information shall be submitted to the engineer:

- a) UL 1449 Listing classifications, and clamping voltage rating for each mode of protection.
- b) ANSI/IEEE C62.41 AND C62.45 Category C3 clamping voltage.
- c) Sequential surge survivability per ANSI/IEEE C62.45.
- d) Dimensions and weight
- e) Recommended connection wiring diagram

1.06 QUALIFICATIONS

- A. Manufacturer must have a minimum of five years (in U.S.) experience in producing TVSS systems.
- B. TVSS devices and accessories shall be obtained through one manufacturer.
- C. Other manufacturers not listed in this document may be considered by the engineer/architect at least 14 days prior to bid. The specifications of the product listed in 1.05 "SUBMITTALS- FOR INFORMATION" shall be highlighted.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. One (1) copy of these Shall be included with the equipment at time of shipment.

1.08 OPERATION AND MAINTENANCE MANUALS

- A. Five (5) copies of the equipment operation and maintenance manuals shall be provided.
- B. Operation and maintenance manuals shall include the following information:
 1. Instruction books and/or leaflets
 2. Recommended renewal parts list

1.10 EXTRA MATERIALS:

- A. Furnish replaceable protection modules for service entrance unit with labeled protective covering for storage.

II. PRODUCTS

2.01 MANUFACTURERS

- A. Cutler-Hammer, Square D, Advanced Protection Technologies (APT), Surge Suppression Inc.

2.02 VOLTAGE SURGE SUPPRESSION – GENERAL

A. Electrical Requirements

1. Unit Operating Voltage -- Refer to drawings for operating voltage and unit configuration.

2. Maximum Continuous Operating Voltage (MCOV) -- The MCOV shall be greater than 115% of the nominal system operating voltage.
3. Protection Modes -- For a wye configured system, the device must have directly connected suppression elements between line-neutral (L-N), line-ground (L-G), and neutral-ground (N-G). For a delta configured system, the device must have suppression elements between line to line (L-L) and line to ground (L-G).
4. UL 1449 2nd Edition SVR -- The maximum UL 1449 2nd Edition SVR for the device must not exceed the following:

Modes	208Y/120	480Y/277	600Y/347
L-N; L-G; N-G	500 V	900 V	1000 V
L-L	900 V	1500 V	1800 V

5. ANSI/IEEE Cat C3 Let Through Voltage -- The let through voltage based on IEEE C62.41 and C62.45 recommended procedures for Category C3 surges (20 kV, 10 kA) shall be less than:

Modes	208Y/120	480Y/277	600Y/347
L-N	910 V	1070 V	1300 V

6. ANSI/IEEE Cat. B3 Let Through Voltage -- Let through voltage based on IEEE C62.41 and C62.45 recommended procedures for the ANSI/IEEE Cat. B3 ringwave (6 kV, 5000 amps) shall be less than:

Modes	208Y/120	480Y/277	600Y/347
L-N	375 V	510 V	300 V

B. TVSS Design

1. Balanced Suppression Platform -- The surge current shall be equally distributed to all MOV components to ensure equal stressing and maximum performance. The surge suppression platform must provide equal impedance

paths to each matched MOV. Designs incorporating TVSS modules shall not be acceptable.

2. Electrical Noise Filter -- Each unit shall include a high-performance EMI/RFI noise rejection filter. Noise attenuation for electric line noise shall be 41 dB at 100 kHz using the MIL-STD-220A insertion loss test method. The unit shall be complimentary listed to UL 1283. Products not able to demonstrate noise attenuation of 41 dB @ 100 kHz shall be rejected.
3. Internal Connections -- No plug-in component modules shall be used as surge current conductors. All internal components shall be hardwired with connections utilizing low impedance conductors and compression fittings.
4. Safety and Diagnostic Monitoring -- Each unit shall be equipped with 200 kAIC internal fuses. Each unit shall provide the following three levels of monitoring:
 - a) Continuous monitoring of fusing system
 - b) Thermal detection circuit shall monitor for overheating in all modes due to thermal runaway.
 - c) A green/red solid state indicator light shall be provided on each phase. The absence of a green light and the presence of a red light, shall indicate which phase(s) have been damaged. Fault detection will activate a flashing trouble light. Units which can not detect open-circuit damage, thermal conditions and over current will not be accepted.
5. Warranty -- The manufacturer shall provide a full ten (10) year warranty from the date of shipment against any TVSS part failure when installed in compliance with manufacturer's written instructions and any applicable national or local electric code.

2.03 SYSTEM APPLICATION

- A. The TVSS applications covered under this section include distribution and branch panel locations, bus plugs, motor control centers (MCC), switchgear, and switchboard assemblies.
- B. Surge Current Capacity -- The minimum total surge current 8 x 20 microsecond waveform that the device is capable of withstanding shall be as shown in the following table:

<u>Application</u>	<u>Min. Surge Current (per mode)</u>
Service Entrance (Switchboards Switchgear, MCC Main Entrance)	120 kA
Distribution Panelboards	80 kA
High Exposure Roof Top Locations	80 kA

Branch Locations (Panelboards,
MCC's, Busway) 40 kA

2.04 Accessories

- A. Push to test feature to verify operational integrity.
- B. Form C dry contacts one NO, one NC for remote status monitoring.

2.05 Enclosures

- A. All enclosed equipment shall have NEMA 1 general purpose enclosures, unless otherwise noted. Provide enclosures suitable for locations as indicated on the drawings and as described below:
 - 1. NEMA 1 surface or flush-mounted general purpose enclosures primarily intended for indoor use
 - 2. NEMA 12 dust-tight enclosures intended for indoor use primarily to provide protection against circulating dust, falling dirt and dripping non-corrosive liquids (Panelboards Only)
 - 3. NEMA 3R rainproof enclosures intended for outdoor use primarily to provide protection against rain, sleet and damage from external ice formation
 - 4. NEMA 4 watertight stainless steel intended for indoor or outdoor use primarily to provide protection against windblown dust and rain, splashing rain, hose-directed water, and damage from external ice formation. (Side Mounted Units Only)

III. EXECUTION

3.01 Examination

3.02 Factory testing

- A. Standard factory tests shall be performed on the equipment under this section. All tests shall be in accordance with the latest version of NEMA and UL standards.

3.03 Installation

- A. The Contractors shall install all equipment per the manufacturer's recommendations and the contract drawings.
- B. Surge protection devices shall be installed and connected before the service entrance is connected or energized.
- C. Existing utilities shall not be interrupted without written permission from project's architect.

END OF SECTION

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