Administered by:

DEPARTMENT OF MANAGEMENT SERVICES

Constructed for:

Department of Highway Safety and Motor Vehicles

NKB A-Wing Switchgear Replacement & D-Wing PDU / UPS / Surge Protection Upgrades
Neil Kirkman Building
HSMV02425040

Project Specifications

100% Construction Documents
September 5, 2025

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Construction Contract
Project Manual
for the

NON-TECHNICAL SPECIFICATION SECTIONS OF DIVISION ONE

LEVELS 4 & 5

(Level 4 - $200,000 - $500,000)
(Level 5 – Over $500,000)

Revised AUGUST 2019
(All previous revisions are obsolete)

DEPARTMENT OF MANAGEMENT SERVICES
REAL ESTATE DEVELOPMENT AND MANAGEMENT
4050 Esplanade Way, Suite 315
Tallahassee, Florida 32399

Form: DBC-5152A

HSMV 02425040
NKB A-WING SWITCHGEAR REPLACEMENT & D-WING PDU / UPS / SURGE PROTECTION UPGRADES
NEIL KIRKMAN BUILDING
TALLAHASSEE, FLORIDA

TO BE CONSTRUCTED FOR:

Department of Highway Safety and Motor Vehicles

2900 Apalachee Parkway
Tallahassee, Florida, 32399

CONTRACT ADMINISTERED BY
Department of Management Services
4050 Esplanade Way, Suite 315
Tallahassee, Florida, 32399

DATE ISSUED: September 5, 2025

ARCHITECT / ENGINEER
McGinniss & Fleming Engineering, Inc.
820 East Park Avenue, Suite I-200
Tallahassee, Florida 32301

SUPPLEMENTARY TERMS AND CONDITIONS

September 5, 2025

HSMV02425040

NKB A-Wing Switchgear Replacement & D-Wing PUD / UPS / Surge Protection Upgrades, Neil Kirkman Building, Tallahassee, Florida

OWNER: Department of Highway Safety and Motor Vehicles

ARCHITECT/ENGINEER: McGinniss & Fleming Engineering, Inc.

This document forms an integral part of the Request for Proposal Documents and the Contract Documents. The receipt of this document must be acknowledged in the space provided on your Proposal. This General Terms and Conditions are hereby modified as follows:

1. **SUBSTANTIAL COMPLETION AND LIQUIDATED DAMAGES:** Section C-7 is amended in part as follows: **This Project is to be substantially complete within 365 calendar days after the date of the Notice to Proceed**. This date may be extended only in accordance with the Contract Documents. **If the project is not substantially completed by the required date, liquidated damages shall be assessed at the rate of $100 per calendar day.**

2. ELECTRICITY. All electricity for light and power necessary during power outages for the construction shall be provided by the Contractor. He shall make all necessary arrangements for this service and perform the work required.

3. INITIAL CONSTRUCTION CONFERENCE. Immediately prior to starting construction or as soon as possible after the construction has started, the Owner's Project Director will arrange a meeting with the Design Professional, State Agency that will occupy the project, General Contractor, Federal Representatives if involved and other interested parties. The purpose of this meeting shall be to discuss requirements and responsibilities of the various parties involved with the objective of expeditious handling of the construction contract. The Owner's Project Director will chair this meeting.

4. OFFICE LOCATION. Contractor must have active office within 300 miles of job site.

5. EXPERIENCE QUESTIONNAIRE. Contractor must submit Experience Questionnaire and Conditions of Award (Form CM01) within 7 working days of low bid award. Document (CM01) can be downloaded from the DMS website.

EXCEPT AS SPECIFICALLY PROVIDED HEREIN, ALL OTHER TERMS AND CONDITIONS OF THE BIDDING DOCUMENTS AND CONTRACT DOCUMENTS REMAIN UNCHANGED.

[END]

Date Issued:_____

A/I Initials:_____

NOTICE TO BIDDERS

The following General Terms and Conditions and the Supplemental Terms and Conditions are part of the bidding and contract process for construction projects in excess of $200,000. These non-technical documents are designed to (i) ensure compliance with applicable laws, (ii) protect the State's interests, and (iii) make the contracting process easier for all parties. Please review carefully all sections in the non-technical specifications including the following items:

1. All Bidders must submit a bid bond with their bid proposal if the bid exceeds $100,000.00. For details please refer to Section B-11 of the General Terms and Conditions.

2. All Bidders must prequalify with the Department of Management Services, Division of Real Estate Development and Management as outlined in Section B-1 of the General Terms and Conditions. For a Contractor to Pre-Qualify with the Department of Management Services (DMS), Division of Real Estate Development and Management, the following items are required **PRIOR** to the submittal of a bid:

   a. Request for Pre-Qualification submitted on Company letterhead.
   b. Copy of the Company's Corporate Registration from the Florida Department of State (SunBiz.org).
   c. Copy of Company's current State Contractor's and Business License with the Department of Business and Professional Regulation Construction Industry Licensing Board.
   d. E-Mail Address for Company's Contact Person.
   e. Verification the Company has registered in My Florida Marketplace (screenshot): https://www.dms.myflorida.com/business_operations/state_purchasing/myfloridamarketplace/mfmp_vendors

   Please send requested items to:

   REDM Pre-Qual
   Department of Management Services
   Real Estate Development and Management
   4050 Esplanade Way, Suite 315.4X
   Tallahassee, Florida 32399-0950
   Phone: 850-413-9588
   Email: redmprequalification@dms.fl.gov

   NOTE: A letter confirming Pre-Qualification with DMS will be e-mailed to the Contractor upon approval of the above requirements. Please submit a copy of confirmation letter with submitted bids and proposals, when applicable.

   DMS Website Address:
   http://dms.myflorida.com/business_operations/real_estate_development_management

3. Technical Prequalification: All Bidders must prequalify regarding technical capabilities. The following items are required for Contractor's Prequalification:

   1. Provide a listing of two (2) similar switchboard projects completed within the past three (3) years.

      a) Description of the Installation/Contractor's Responsibilities

b) Contract amount (list the portion the Contractor's was responsible for, rounded to nearest $1000.00)

2. Provide a listing of two (2) projects where medium voltage cable terminations were completed within the past three (3) years.

   a) Description of installation and termination type

   b) Name of employee responsible for terminations

Submit technical prequalification materials to: Brian Wallace, McGinniss & Fleming Engineering, Inc, 820 East Park Avenue, Suite I-200, Tallahassee, Florida, 32301, Phone: 850-681-6424, Email: bwallace@mfe-inc.com

4. Criminal History Background Checks must be obtained for all employees and agents of the Contractor and its subcontractors, their agents and employees, and all other persons performing any of the work under a contract to the Contractor working within buildings or facilities either owned or managed by the Department of Management Services. Details of this responsibility are outlined in Article C-38 of the General Terms and Conditions. Additional instructions can be found at the website listed below. Background checks shall be Level 2 for this project and include CJIS approval.

5. All Bidders are responsible for the cost of insurance and bonds. Please refer to Sections C-1 through C-3 of the General Terms and Conditions for required types of insurance and Exhibits 2 and 3 to review the requirements on the bond forms.

6. Proposal Form may be obtained from the Architect-Engineer or from the Department of Management Services website at the link shown below.

7. Samples of all Forms required by the Department of Management Services are shown in this document. Please refer to the website shown below to obtain current copies of these forms.

http://dms.myflorida.com/business_operations/real_estate_development_management/building_construction/forms_and_documents

ADVERTISEMENT TO BID CONSTRUCTION

PROPOSALS ARE REQUESTED FROM QUALIFIED ELECTRICAL CONTRACTORS BY THE DEPARTMENT OF MANAGEMENT SERVICES HEREINAFTER REFERRED TO AS OWNER, FOR THE PROJECT REFERENCED BELOW:

PROJECT NO: HSMV-02425040

PROJECT NAME & LOCATION: NKB A-Wing Switchgear Replacement & D-Wing PDU / UPS / Surge Protection Upgrades, Neil Kirkman Building, Tallahassee, Florida

ESTIMATED CONSTRUCTION COST: $2,216,309

MANDATORY DEPARTMENT OF MANAGEMENT(DMS) SERVICES PREQUALIFICATION: Each bidder whose field is governed by Chapter 399, 455, 489, and 633 of the Florida Statutes for licensure or certification must submit pre-qualification data of their eligibility to submit bid proposals five (5) calendar days prior to the bid opening date. If bidder has been previously prequalified by the Department of Management Services for the current biennium (September 1 through August 31) of even numbered years, please verify pre-qualification is still valid. Prequalification requirements are outlined in the Non-Technical Specification Instruction to Bidders under Article B-2 "Bidder Qualification Requirements and Procedures". *Please call (850) 413-9588 for information on requirements for pre-qualification with the Department of Management Services.*

After the bid opening, the low bidder may be required to provide additional financial and bidding qualifications in accordance with Florida Administrative Rule 60D-5.004. These requirements are outlined in the Non-Technical Specifications Instruction to Bidders under Article B-22 "Qualifications for Award of Contract".

PUBLIC ENTITY CRIME INFORMATION STATEMENT: Under section 287.017 Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services and/or construction or repair of a public building or public work and may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity for a period of 36 months from the date of being placed on the convicted vendor list.

DISCRIMINATION; DENIAL OR REVOCATION FOR THE RIGHT TO TRANSACT BUSINESS WITH PUBLIC ENTITIES: Under section 287.134(2) Florida Statutes, entities or affiliates who have been placed on the State of Florida's discriminatory vendor list may not submit a bid or proposal on this contract.

COOPERATION WITH THE INSPECTOR GENERAL: Pursuant to section 20.055(5), Florida Statutes, the bidder who is awarded the contract and its subcontractors understand and will comply with their duty to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing.

BID BOND: If the Base Bid or the Base Bid plus the sum of any alternates exceed $100,000, the bidder shall enclose a certified check, cashier's check, treasurer's check, bank draft or Bid Bond in the amount of not less than five percent (5%) of the Bid, payable to the Owner as a guarantee for the purpose set out in Instructions to Bidders. *(Failure to submit a bid bond will result in disqualification)*

PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND: If the construction contract award amount exceeds $100,000.00, a Performance Bond and a Labor and Material Payment Bond will be required and will be issued with the award of contract.

PRE-BID MEETING:

Date and Time: Thursday, September 18, 2025 at 10:30 a.m. (Eastern Standard Time).

Place: Neil Kirkman Building, 2900 Apalachee Parkway, Tallahassee, FL 32399. *(Meet in the front lobby at main entry near reception desk)*

SEALED BIDS WILL BE RECEIVED, PUBLICLY OPENED AND READ ALOUD ON:

Date and Time: Tuesday, October 14, 2025 at 2:00 p.m. (Eastern Standard Time).

Place: Neil Kirkman Building, 2900 Apalachee Parkway, Tallahassee, FL 32399. *(Meet in the front lobby at main entry near reception desk)*

NOTE: Sealed bids must be delivered to Neil Kirkman Building, 2900 Apalachee Parkway, Tallahassee, FL 32399, by date and time above.

PROPOSAL: Bids must be submitted in full in accordance with the requirements of the Drawings, Specifications, Bidding Conditions and Contractual Conditions, which may be examined and obtained from the:

ARCHITECT-ENGINEER: McGinniss & Fleming Engineering, Inc., 820 East Park Avenue, Suite I-200, Tallahassee, Florida 32301
TELEPHONE: 850-681-6424 ext. 5#

Electronic documents in PDF format can be made available free upon request. (email engineer for electronic documents at: bwallace@mfe-inc.com)

DISABILITY ACCESS: Pursuant to the provisions of the Americans with Disabilities Act according to 286.26 Florida Statues, any person requiring special accommodations to participate in this meeting/bid opening is asked to advise the agency at least 48 hours before the meeting by contacting Brian Wallace at 850-681-6424 ext. 5#. If you are hearing or speech impaired, please contact the agency using the Florida Relay Service, 1(800)955-8771 (TDD) or 1(800)955-8770 (Voice).

CONTRACT AWARD: The Notice of Award Recommendation will be posted on the Vendor Bid System and DMS Opportunities website at http://www.myflorida.com/apps/vbs/vbs_www.main_menu within 72 hours (business day) after the bids are opened. In the event that the Bid Tabulation and Notice of Award Recommendation cannot be posted within this time frame, then all bidders will be notified by e-mail or fax when the award is posted. If no protest is filed per Section B-19 of the Instructions to Bidders, "Notice and Protests Procedures", the contract will be awarded to the qualified, responsive low bidder in accordance with Rule 60D-5 by the Owner.

(SUBMIT IN TRIPLICATE ON CONTRACTOR'S LETTERHEAD)

Contractor Proposal and Subcontractor List

(Insert Date)

(Insert Time)

TO:

Ladies and Gentlemen:

The undersigned, hereinafter called "Bidder", having visited the site of the proposed project and familiarized himself with the local conditions, nature and extent of the work, and having examined carefully any drawings or specifications, the Form of Agreement, and other Contract Documents with the Bond Requirements therein, proposes to furnish all labor, materials, equipment and other items, facilities, and services for the proper execution and completion of NKB A-Wing Switchgear Replacement & D-Wing PDU / UPS / Surge Protection Upgrades, Neil Kirkman Building, HSMV, in full accordance with any drawings and specifications prepared by the firm of McGinniss & Fleming Engineering, Inc.; 820 East Park Avenue, Suite I-200, Tallahassee, FL 32301; 850-681-6424, in full accordance with the advertisement for bids, General Terms and Conditions, Agreement and all other documents relating thereto on file in the office of the Architect/Engineer and if awarded the contract, to complete the said work within the time limits specified for the following bid price:

Base Bid: $ (Dollars)

With foregoing as a Base Bid, the following costs of alternate proposals are submitted in accordance with the drawings and specifications.

Alternate No. 1 Add or Deduct $ (Insert Dollar Amount)
Alternate No. 2 Add or Deduct $ (Insert Dollar Amount)
Alternate No. 3 Add or Deduct $ (Insert Dollar Amount)

If more or less work is required than that qualified by the specifications and drawings, the following unit prices shall be applicable:

1. Item: _____ Unit Price: _____

2. Item: _____ Unit Price: _____

(If this section is not applicable it may be left out).

The Bidder hereby agrees that:

a. The above proposal shall remain in full force and effect for a period of sixty (60) calendar days after the time of the opening of this proposal and that the Bidder will not revoke or cancel this proposal or withdraw from the competition within the said sixty (60) calendar days.

b. If the Base Bid or the Base Bid plus the sum of any alternates exceed $100,000, the bidder shall enclose a certified check, cashier's check, treasurer's check, bank draft or Bid Bond in the amount of not less than five percent (5%) of the Bid, payable to the Owner as a guarantee for the purpose set out in Instructions to Bidders. ***(Failure to submit a bid bond will result in disqualification).***

c. In the event the contract is awarded to this Bidder, they will enter into a formal written Agreement with the Owner in accordance with the accepted bid within ten (10) calendar days after said contract is submitted to the bidder. If the Base Bid

or the Base Bid plus the sum of any alternates exceed $100,000, Bidder will furnish to the Owner a Contract Performance Bond and a Labor and Material Payment Bond with good and sufficient sureties, satisfactory to the Owner, in the amount of 100% of the accepted bid, the form of which is shown by Exhibits to the General Terms and Conditions and which shall fully comply with Section 255.05, Florida Statutes. The Bidder further agrees that in the event of the Bidder's default or breach of any of the agreements of this proposal, the said bid deposit shall be forfeited as liquidated damages.

Acknowledgement is hereby made that this proposal includes required permit fees as directed in Section B-4, Permits.

Acknowledgement is hereby made of receipt of the following addenda issued during the bidding period.

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Florida Construction Industries Licensing Board Certification.

Holder: (Insert Name of Holder) Certificate No: (Insert Certificate No.)

In witness whereof, the Bidder has hereunto set his signature and affixed his seal this (Insert Day) day of (Insert Month) (Insert Year).

(SEAL)

By: _____

Title: _____

Proposal Form Continued

LIST OF SUBCONTRACTORS

(Submit in triplicate on the Bidder's letterhead, place in a sealed envelope and attach to Bidder's proposal.)

(Insert Date)

THIS LIST IS ATTACHED TO, AND IS AN INTEGRAL PART OF THE BID SUBMITTED BY:

Bidder's Name:

Bidder's Address:

FOR THE CONSTRUCTION OF:

Project Number:

Project Name:

THE UNDERSIGNED, HEREINAFTER CALLED "BIDDER", LISTS BELOW THE NAME OF EACH SUBCONTRACTOR WHO WILL PERFORM THE PHASES OF THE WORK INDICATED. FAILURE OF THE BIDDER TO SUPPLY SUFFICIENT INFORMATION TO ALLOW VERIFICATION OF THE CORPORATE, AND DISCIPLINE LICENSE STATUS OF THE SUBCONTRACTOR MAY DEEM THE BID AS BEING NON-RESPONSIVE.

SUBCONTRACT/TRADE	NAME OF SUBCONTRACTOR
1.	
2.	
3.	
4.	
5.	

By_____
(Signature)

GENERAL TERMS AND CONDITIONS

For Level 4 & 5 Construction Contracts with the State of Florida
(Projects over $200,000)

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GENERAL TERMS AND CONDITIONS

SECTION A – DEFINITIONS

Whenever the following terms (or pronouns which replace these terms) are used in the Contract Documents, their intent and meaning shall be interpreted as follows:

AGREEMENT:
The document entitled "Agreement Between Owner and Contractor" in the form attached as Exhibit 1. The Agreement represents the entire integrated agreement between the parties and supersedes all prior negotiations, representations or agreements. The Agreement may be amended only by a Modification.

AIA DOCUMENT
The American Institute of Architects Document A201, General Conditions of Contract for Construction – 1997 edition. Where referenced, the terms of the AIA Document shall apply to this Agreement as if written in full herein.

ARCHITECT/ENGINEER:
The Design Professionals (Architect/Engineer, Architect, Engineer or Other) commissioned by Owner for the Project. The terms Architect or Architect/Engineer mean the Architect/Engineer and its authorized representative.

BIDDER:
Any individual, firm, partnership or corporation submitting a Proposal for the Project.

BIDDING DOCUMENTS:
All documents provided by Owner or Architect/Engineer to Bidders in connection with the solicitation of bids for the Project, including (i) these General Terms and Conditions; (ii) any Supplementary Terms and Conditions; (iii) the plans, drawings and specifications for the Project; and (iv) any Addenda issued pursuant to Section B-7.

CHANGE ORDER:
A written document prepared by Architect/Engineer and signed by Owner stating their agreement on (i) a change in the work required on the Project; (ii) the amount of adjustment in the Contract Sum, if any; and (iii) the extent of an adjustment in the Contract Time, if any.

CONTRACT DOCUMENTS:
All documents to be incorporated into the Agreement, including (i) these General Terms and Conditions; (ii) any Supplementary Terms and Conditions; (iii) the plans, drawings and specifications for the Project; (iv) any Addenda issued pursuant to Section B-7; (v) the Proposal; and (vi) any Modifications.

CONTRACT SUM:
The amount stated in the Agreement, which is the total amount payable by Owner to Contractor for completing the Project.

CONTRACT TIME:
The period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Project.

CONTRACTOR:
The successful Bidder who enters into the Agreement.

MODIFICATION:
A document issued after execution of the Agreement with the intent of amending the terms thereof, including (i) a written amendment to the Agreement signed by both parties, (ii) a Change Order, (iii) a written order for a minor change in work issued by the Architect/Engineer.

OWNER:
The state agency identified in the Bidding Documents and the Agreement.

PROJECT:
The Project identified in the Bidding Documents and the Agreement.

PROPOSAL:
A bid to work on the Project, which the Bidder shall submit on approved forms.

SUBSTANTIAL COMPLETION:
"Substantial Completion" shall mean that the Project is sufficiently completed in accordance with the Contract Documents, so that Owner can occupy or utilize the work or designated portions thereof for the use for which it is intended, as expressed in the Contract Documents. The term "Substantial Completion" shall not mean the inclusion of such minor alterations and patching as the Final Inspection shall disclose.

SECTION B -- BIDDING CONDITIONS

B-1 PREQUALIFICATION TO SUBMIT A BID

Bidder qualification requirements and procedures are established by Department rule (Rule 60D-5, Florida Administrative Code), and by the Bidding Documents. Failure of the bidder to strictly meet and follow all such requirements and procedures may result in bid rejection.

Mandatory Prequalification Requirements: Bidders who are regulated under Chapter 399, 455, 489, or 633, Florida Statutes will be prequalified to bid in that specific field of construction if they provide the Owner with evidence of:

(i). Current State Contractor license certification or registration as required under Florida Statutes

(ii) Current Corporate Charter registration if the potential bidder is a domestic (Florida) corporation, or if the potential bidder is a foreign (non-Florida) corporation, or a limited partnership or limited liability company, with a current registration with the Florida Department of State.

PLEASE NOTE:
Evidence of above requirements for prequalification should be provided to the Department of Management Services no later than five (5) calendar days prior to bid date. Failure to pre-qualify may result in disqualification of a bid. *(Please call 850-413-9588 for instructions on prequalification with the Department of Management Services).*

Other Prequalification Requirements: Additional prequalification may be requested for projects that require a contractor with specific expertise and experience. These requirements may be set forth in the Special Terms and Conditions or may be required through pre-bid conferences by the Agency or the Architect-Engineer.

B-2 FAMILIARITY WITH LAWS

Bidders are 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 will in no way relieve it from responsibility.

B-3 FLORIDA PRODUCTS AND LABOR

Bidder's attention is called to Section 255.04, Florida Statutes, which requires that on public building contracts Florida products and labor shall be used wherever price and quality are equal.

B-4 PERMITS

Bidders will be obligated to identify and obtain all necessary permits for the Project. Bidders shall include the cost of all such permits in its Proposal. Such permits include but are not limited to the building permit, any plumbing, electrical, other internal system permits, and any connection permits,

B-5 TAXES

Although Owner is not subject to the Florida Sales and Use Tax, any contractor who purchases materials and services, which will be used in the construction of State-owned buildings, will not be exempted from the Tax on these materials and services as evidenced by the following excerpt from the Florida Statutes:

"The State, any county, municipality or political subdivision of this State is exempt from the sales tax, except this exemption shall not include sales of tangible personal property made to contractors employed either directly or as agents of any such government or political subdivision thereof when such tangible personal property goes into or becomes a part of public works owned by such government or political subdivision thereof."

Owner is not subject to:

1. Federal Excise Taxes on materials or appliances that are incorporated into and become a part of the completed improvement.

2. Federal Tax on Transportation of Property.

In every case of a purchase of materials to be incorporated in the work, which are subject to Federal Excise Tax, Owner will furnish to contractor the necessary Federal Excise Tax Exemption Certificate upon receipt of a copy of the supplier's invoice showing the item or items, the net price, and Federal Excise Tax separately.

Bidders shall take these factors into consideration in preparing its proposal, including therein the cost of the State Sales Tax and Use Tax on materials, but excluding the cost of those taxes not applicable.

B-6 ALTERNATES

If Owner wishes to learn the relative or additional construction cost of an alternative method of construction, an alternative use or type of material or an increase or decrease in scope of the Project, these items will be defined as alternates and will be specifically described by the Bidding Documents. Alternates will be listed in the Proposal form in a manner that the Bidder shall be able to clearly indicate what sums they will add to (or deduct from) their Base Bid.

B-7 ADDENDA

In case the Architect/Engineer finds it expedient to supplement, modify or interpret any portion of the Bidding Documents during the bidding period, such procedure will be accomplished by the issuance of written Addenda to the Bidding Documents, which will be delivered or mailed to all prospective Bidders.

B-8 INTERPRETATION OF BIDDING DOCUMENTS

No interpretation of the meaning of the Drawings, Specifications or other Bidding Documents and no correction of any apparent ambiguity, inconsistency or error therein will be made to any Bidder orally. Every request for such interpretation or correction shall be in writing, and addressed to the Architect/Engineer. All such interpretations and supplemental instruction will be in the form of written Addenda to the Bidding Documents.

Only the interpretation or correction so given by the Architect/Engineer in writing shall be binding, and prospective Bidders are advised that no other source is authorized to give information concerning, or to explain or interpret, the Bidding Documents.

B-9 EXAMINATION OF BIDDING DOCUMENTS AND WORKSITE

Bidders are required, before submitting their proposals, to visit the site of the proposed work and completely familiarize themselves with the nature and extent of the work and any local conditions that may in any manner affect the work to be performed and the equipment, materials and labor required. They are also required to examine carefully any Drawings, Specifications and other Bidding Documents to inform themselves thoroughly regarding any and all conditions and requirements that may in any manner affect the work.

The Owner is presumed to be the owner of all drawings and specifications, and Contractor may not use those documents except as authorized herein or in Article 1.6 of the AIA Document ("Ownership and Use of Drawings, Specifications and Other Instruments of Service").

B-10 BASIS FOR BIDDING - TRADE NAMES

For clarity of description and as a standard of comparison, certain equipment, materials, etc., have been specified by at least two trade names or manufacturers. To ensure a uniform basis for bidding, the Bidder shall base its Proposal on the particular system, equipment or material specified. After the contract is let, other equipment materials, etc., as manufactured by other manufacturers may be accepted only if, in the opinion of the Architect/Engineer, same is equivalent in quality and workmanship and will perform its intended purpose satisfactorily.

B-11 BID GUARANTEE

On projects where the base bid and sum of all additive alternates exceeds $100,000, the bid proposal shall be accompanied by a bid guarantee of not less than five (5) percent of the amount of the bid. The bid bond may be a certified check, a cashier's check, treasurer's check, bank draft or Bid Bond made payable to Owner. If a bid bond is submitted, it must be signed by a Florida Licensed Resident Agent who holds a current Power of Attorney from the Surety Company issuing the Bond and the Power of Attorney must be attached to the Bid Bond. Such check or Bid Bond shall be submitted with the understanding that it shall guarantee that the Bidder (a) will not withdraw its bid for sixty (60) days after the scheduled date of opening of the bids; (b) will enter into a written contract with Owner in accordance with the form of Agreement attached as Exhibit 1 within ten (10) calendar days after receiving the executable copies, and (c) will diligently pursue the required Performance Bond and Labor and Material Payment Bond and provide such bonds within twenty (20) calendar days after receiving the Agreement. In the event Bidder fails to perform as described in the preceding sentence, the Bidder shall be liable to Owner for the full amount of the bid guarantee as representing the damage to Owner on account of the default.

The Bid Bonds or checks shall be returned to all except the apparent lowest two qualified Bidders after the formal opening of bids. The remaining Bid Bonds or checks will be returned to the two lowest Bidders after Owner and the accepted Bidder have executed the Agreement and the Performance Bond and Labor and Material Payment Bond have been approved by Owner. If the required Agreement and Bonds have not been executed within sixty (60) calendar days after the date of the opening of the bids, then the Bid Bond or check of any Bidder will be returned upon its request, provided it has not been notified of the acceptance of its bid prior to the date of such request.

B-12 SURETY COMPANIES ACCEPTABLE TO STATE

To be acceptable to the State as Surety for Bid Bonds, Performance Bonds and Labor and Material Payment Bonds, a Surety Company shall comply with the following provisions:

1. The Surety Company shall have a currently valid Certificate of Authority, issued by the State of Florida, Office of Insurance Regulation, authorizing it to write surety bonds in the state.

2. The Surety Company shall have currently valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title 31 of the United States Code.

3. The Surety Company shall be in full compliance with the provisions of the Florida Insurance Code.

4. The Surety Company shall have at least twice the minimum surplus and capital required by the Florida Insurance Code at the time the invitation to bid is issued.

5. If the Contract Award Amount exceeds $500,000, the Surety Company shall have at least the following minimum ratings in the latest issue of Best's Key Rating Guide:

Contract Amount ($)			Policy Holder's Rating	Required Financial Rating
0	To	1,000,000	A-	CLASS I
1,000,000	To	2,000,000	A-	CLASS II
2,000,000	To	5,000,000	A-	CLASS III
5,000,000	To	10,000,000	A-	CLASS IV
10,000,000	To	25,000,000	A-	CLASS V
25,000,000	To	50,000,000	A-	CLASS VI
50,000,000	To	100,000,000	A-	CLASS VII

Further, the Surety Company shall not expose itself to loss on any one risk in an amount exceeding ten (10) percent of its surplus to policyholders, provided:

(a) Any risk or portion of any risk being reinsured shall be deducted in determining the limitation of the risk. The 10% maximum exposure requirement shall not apply to the reinsuring carrier provided authorization by the Florida Office of Insurance Regulation to do business in this state has been obtained.

(b) The amount assumed by any co-surety, the value of any security deposited, pledged or held subject to the consent of the surety and for the protection of the surety shall also be deducted in determining the limitation of the risk.

B-13 PREPARATION AND SUBMISSION OF BIDS

Each Bidder shall submit its Proposal on Bidder's letterhead using the proposal form supplied by Architect/Engineer and indicating its bid prices for the Base Bid and any alternates on which he bids. Any erasure or other correction in the proposal may be explained or noted over the signature of the Bidder.

Proposals containing any conditions, omissions, unexplained erasures, alterations, items not called for or irregularities of any kind may be rejected by Owner.

Each bid must show the full business address of the Bidder and state whether it is an individual, corporation or partnership. The bid should be submitted in triplicate in a sealed envelope. The envelope must be clearly marked on its face as follows:

"SEALED BID – STATE PROJECT NO. _____"

Each Bidder must fill in the State Project Number and submit the bid prior to the time and the place specified in the Bidding Documents. Sealed bid envelopes submitted by mail or by delivery service must be delivered within a separate mail or delivery envelope, also marked

"SEALED BID". Bids not delivered in sealed envelopes may be returned to the bidder.

B-14 LISTING OF SUBCONTRACTORS

In order that Owner may be assured that only qualified and competent subcontractors will be employed on the Project, each Bidder shall submit in triplicate with its Proposal a list of the subcontractors who will perform the work for each Division of the Specifications utilizing the form supplied by Architect/Engineer. The Bidder shall have determined to its own complete satisfaction that a listed subcontractor has been successfully engaged in this particular type of business for a reasonable length of time, has successfully completed installations comparable to that which is required by this Agreement and is qualified both technically and financially to perform that pertinent phase of this work for which the subcontractor is listed. Only one subcontractor shall be listed for each phase of the work.

Any Bidder who lists a subcontractor not certified and/or registered by the State to perform the work of its trade if, such certification or registration is required for the trade by Florida Laws, will be rejected as non-responsive.

No change shall be made in the list of subcontractors, before or after the award of a contract, unless agreed to in writing by Owner.

B-15 SUBCONTRACTOR DATA

Within two (2) working days after bid opening, the apparent low bidder shall submit to Owner's Project Manager the following for each subcontractor.

1. Complete name, address and phone number.
2. Corporate Charter Number. (If applicable)
3. License Number.
4. Name of record license holder.

B-16 WITHDRAWAL OF BIDS

Bids may be withdrawn by written request received from Bidders prior to the time fixed for opening. Negligence on the part of the Bidder in preparing the bid confers no right for withdrawal of the bid after it has been opened.

B-17 DISQUALIFICATION OF BIDDERS

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

B-18 RECEIPT AND OPENING OF BIDS

Bids will be opened publicly at the time and place stated in the Bidding Documents. The officer whose duty it is to open them will decide when the specified time has arrived and no bids received thereafter will be considered. No responsibility will be attached to any officer for the premature opening of a bid not properly addressed and identified. At the time fixed for the opening of bids, the bids will be read out loud.

B-19 DISQUALIFICATION OF BIDS

Any or all Proposals will be rejected if there is reason to believe that collusion exists among the Bidders and no participants in such collusion will be considered in future proposals for the same work. Falsification of any entry made on the Proposal will be deemed a material bid deviation and will be grounds for rejection.

B-20 REJECTION OF BIDS

Owner reserves the right to reject any and all bids under any of the circumstances prescribed in Rule 60D-5.0071, Florida Administrative Code, or if the low qualified bid exceeds the Project construction budget. If all bids are rejected, Owner may rebid the Project or proceed in any other manner to commence work on the Project as authorized by law.

B-21 DETERMINATION OF SUCCESSFUL BIDDER

Award of contract will be made to the responsive bidder, determined to be qualified in accordance with the provisions herein and meeting the requirements of the Bidding Documents that submits the lowest valid bid for the work. The lowest bid will be determined as follows:

1. The lowest bid will be the bid from the responsive Bidder that has submitted the lowest price for the base bid or the base bid plus the additive alternates or less the deductive alternates chosen by Owner to be included in or excluded from the proposed contract, taken in numerical order listed in the bid documents. The order of the alternates may be selected by Owner in any sequence so long as such acceptance out of order does not alter the designation of the low bidder.

2. On Projects where Bidding Documents provide for evaluation of the bids based on first cost and life cycle cost and performance criteria, the lowest bid will be the bid by the firm whose bid products are determined to yield the lowest total cost in accordance with the criteria set forth in the Bidding Documents.

B-22 QUALIFICATIONS FOR AWARD OF CONTRACT

Prior to being awarded a contract, a low Bidder will be required to satisfy the qualification requirements established in Rule 60D-5, Florida Administrative Code. Failure to strictly meet and follow all such requirements may result in disqualification for contract award.

Generally, a low responsive Bidder must provide to Owner the following:

1. Within two (2) working days after the notice of the bid decision, evidence of Bidder's ability to provide the necessary performance and payment bonds for the project by providing a letter of intent from a surety company meeting the requirements of Section B-11 above.

2. Within seven (7) working days after the notice of the bid decision, the bidder must provide, if requested: (a)a list of projects of similar size and complexity and their status for a period of thirty-six months prior to solicitation, (b)and a copy of the Bidder's current financial statement. Owner shall have wide discretion to determine whether the Bidder's experience and financial condition are adequate for the Project.

3. Prior to entering the Agreement, evidence of insurance in effect, equal to or exceeding the limits required in Section C-3 or other Contract Documents.

Owner will have fourteen (14) days from receipt of each document to determine whether the Bidder is qualified for the contract award. Should the Bidder be disqualified, its bid will be rejected and the Bidder submitting the next low responsive bid will be given seven (7) working days to submit its qualification data.

Other prequalification requirements may be set forth in the Special Terms and Conditions.

proceedings under Section 120.57, Florida Statutes.

B-23 NOTICE AND PROTEST PROCEDURES

1. Notification.

(a) Bid Solicitation: Owner shall provide notice of its decision or intended decision concerning a bid solicitation by advertising for bids and distribution of Bidding Documents.

(b) Contract Award: On contracts in excess of $35,000, notice of a decision or intended decision on contract award or bid rejection shall be given by posting at the location where the bids were opened, by electronic posting or by direct communication to Bidders.

2. Protest.

(a) Any person who is affected adversely by Owner's decision or intended decision shall file with Owner a notice of protest in writing within 72 hours, excluding Saturday, Sunday and State legal holidays, after (i) receipt of the Bidding Documents if the protest is directed toward the Bidding Documents, or (ii) notice of Owner's decision or intended decision on contract award or bid rejection if the protest is directed toward contract award or bid rejection.

(b) Thereafter, a formal written protest by petition in compliance with Section 120.57, Florida Statutes, and Rule 28-110, Florida Administrative Code, must be filed with Owner within ten (10) days after the date the notice of protest was filed.

(c) Failure to file a timely notice of protest or a timely formal written protest petition shall constitute a waiver of protest proceedings. Any protest filed prior to posting of the bid tabulation or receipt of the notice of the agency decision or intended decision will be considered abandoned unless renewed within the time limit provided for protests.

3. Owner Action.

(a) Upon receipt of a notice of protest that has been timely filed, Owner shall delay the contract award process until the subject of the protest is resolved by mutual agreement between the parties or by final Owner action, unless Owner sets forth in writing particular facts and circumstances which require the continuation of the bid solicitation process or the contract award process without delay to avoid an immediate and serious danger to public health, safety, or welfare; provided, however, that if the petition is not filed within the time stated above, the contract award process may continue as if the notice of protest had not been filed.

(b) Upon receipt of the formal written protest petition which has been timely filed, Owner shall attempt to resolve the protest by mutual agreement between the parties within 7 days, excluding Saturday, Sunday and legal State holidays.

(c) If the protest is not resolved by mutual agreement within said seven (7) days, and if no disputed issue of material fact is involved, Owner may designate a Hearing Officer who shall conduct an informal proceeding pursuant to Section 120.57, Florida Statutes. The qualifications of such designated Hearing Officer shall be: (i) a member in good standing of The Florida Bar; or (ii). a person knowledgeable by virtue of practical experience of the procedures relating to soliciting and evaluating bids for state contracts. Notice of informal proceedings shall be given no less than three days prior to the proceeding. The proceeding may be held before Owner.

(d) If there is a disputed issue of material fact, the protest shall be referred to the Division of Administrative Hearings of Department of Management Services, State of Florida, for

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SECTION C -- CONTRACT CONDITIONS

C-1 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

On projects where the Contract Sum exceeds $100,000, Contractor shall furnish Owner with a 100% Performance Bond and 100% Labor and Material Payment Bond written by a Surety Company acceptable to Owner and authorized to do business in the State of Florida and signed by a Florida Licensed Resident Agent. Contractor is required to furnish replacement bonds in the event of cancellation of the original Performance Bond and Labor and Material Payment Bond. The Bonds shall be substantially in the form shown in Exhibits 2 and 3.

The cost of all Performance Bonds and Labor and Material Payment Bonds shall be borne by Contractor. The Bonds shall be accompanied by a duly authenticated or certified document, in duplicate, evidencing that the person executing the Bonds on behalf of the Surety had the authority to do so on that date of the Bond. In the usual case, conferring of that authority has occurred prior to the date of the Bond, and the document showing the date of appointment and enumeration of powers of the person executing the Bond is accompanied by a certification that the appointment and powers have not been revoked and remain in effect. The date of that certification shall be dated the same date as the Bonds and the Bonds shall be dated the same date as the Agreement.

C-2 EXECUTION OF AGREEMENT AND BONDS

Contractor shall execute all required forms of the Agreement and return within fourteen (14) calendar days of their receipt. Failure to return all forms correctly executed within fourteen (14) calendar days of receipt, without extension by Owner otherwise, may constitute an irregularity and deemed grounds, at Owner's option, for rejection and forfeiture of the Bid Deposit or at Owner's option, for the deduction on a day-for-day basis from the time allotted for final completion of the work under the Agreement.

If the Contractor is a firm or Company owned by an individual, the agreement shall be executed in the name of the firm or company by the manual signature of the individual or sole proprietor.

If Contractor is a partnership, the Agreement shall be executed in the name of the partnership by a general or managing partner.

If Contractor is a corporation, the Agreement shall be executed in the name of the entity by a duly authorized officer.

If the Contractor is an LLC, the Agreement shall be executed by a managing member or manager of the company.

If the Contractor is a corporation, the agreement shall be executed in the name of the Corporation and shall bear the corporate seal. It may be signed for the corporation by the President and attested by the Secretary; if signed for the Corporation by any other officer than the President, the signature of such officer signing shall be attested by the Secretary, and the executed agreement shall be accompanied by a duly authenticated document bearing the seal of the corporation, quoting the section of the by-laws of the corporation authorizing the Board of Managers to designate such officer and copy of the resolution designating and authorizing him to execute on behalf of the corporation. That document must contain a statement that the authority is in effect on the date of the execution of the contract, and may not be dated earlier than the date of the execution of the Agreement. The same officer may not execute the Agreement and authenticate the document of authority.

The Performance Bond and Labor and Material Payment Bond shall be executed on behalf of Contractor in the same manner and by the same person who executed the Agreement.

C-3 CONTRACTOR'S INSURANCE

Contractor shall not commence any work in connection with this Agreement until he has obtained all of the following types of insurance and such insurance has been approved by Owner, nor shall Contractor allow any subcontractor to commence work on a subcontract until all similar insurance required of the subcontractor has been so obtained and approved. All insurance policies shall be with insurers qualified and doing business in Florida through an authorized licensed Florida Resident Agent.

Worker's Compensation Insurance. Contractor shall take out and maintain during the life of this Agreement, Worker's Compensation Insurance for all of its employees connected with the work of this Project and, in case any work is sublet, Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by Contractor. Such insurance shall comply fully with the Florida Worker's Compensation law. In case any class of employees engaged in hazardous work under this contract at the site of the Project is not protected under the Worker's Compensation statute, Contractor shall provide, and cause each subcontractor to provide, adequate insurance satisfactory to Owner, for the protection of its employees not otherwise protected.

Bodily Injury and Property Damage Insurance. Contractor shall take out and maintain during the life of this Agreement the following insurance policies as shall protect it from claims for damage for personal injury, including accidental death, as well as claims for property damages which may arise from operating under this Agreement whether such operations are by itself or by anyone directly or indirectly employed by him, and the amount of such insurance shall be the minimum limits as follows:

(1) Contractor's Comprehensive General Liability Insurance:
$1,000,000 Each Occurrence, Combined Single Limit.

(2) Auto Liability Insurance:
$300,000 Each Occurrence, Combined Single Limit.

(3) Owner's and Contractor's Protective Liability Insurance:
$500,000 Each Occurrence, Combined Single Limit.

(4) Builder's Risk Insurance, All Risks Form:
To be issued on a completed value basis. Installation Floaters and other Inland Marine Forms may be utilized where applicable and are in the best interest of Owner.

Asbestos Abatement Contractors Liability Insurance Pollution Endorsement. An asbestos abatement Contractor shall procure a pollution endorsement to his public liability insurance, against claim or claims expenses arising from the abatement project, as required by Section 255.56 of the Florida Statutes. The coverage by the endorsement may be of the Claims-Made type.

Subcontractor's Insurance. Unless the above policies extend to the operations of all subcontractors, Contractor shall require each subcontractors to procure and maintain during the life of the subcontract, insurance of the type specified above.

"XCU" (Explosion, Collapse, Underground Damage). Contractor's insurance policies shall provide "XCU" coverage for those classifications in which they are applicable.

Broad Form Property Damage Coverage, Products and Completed Operations Coverages. Contractor's liability policy shall include Broad Form Property Damage Coverage, Products and Completed Operations Coverages.

Contractual Liability-Work Contracts. Contractor's Liability Policy shall include Contractual Liability Coverage designed to protect Contractor for contractual liabilities assumed by Contractor in the performance of this Contract.

Indemnification. To the fullest extent permitted by law, Contractor and it's liability insurer shall indemnify and hold harmless Owner from and against liabilities, damages, losses and costs, including but not limited to reasonable attorneys fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Contractor or Contractor's employees, agents and subcontractors in the performance of work on the Project. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity, which would otherwise exist as to Owner.

Contractor hereby acknowledges receipt of good and valuable consideration as part of its fee in exchange for giving Owner the indemnification provided above. The limit of such indemnification shall be $1,000,000.00 per occurrence.

Loss Deductible Clause. Owner shall be exempt from, and in no way be liable for any sums of money, which may represent a deductible in any insurance policy. The payment of such deductible shall be the sole responsibility of the Contractor and/or Subcontractor providing such insurance.

Certificate of Insurance. Owner shall be furnished proof of coverage of the above required insurance. Said certificate of insurance forms shall be completed, signed by the authorized licensed Florida Resident Agent and returned to the office of Owner. These certificates shall be dated and show:

(1) The name of the insured contractor, the specific job by name and number, the name of the insurer, the number of the policy, its effective date, and its termination date.

(2) Statement that the Insurer will mail notice to Owner at least thirty (30) calendar days prior to any material changes in provisions or cancellation of the policy.

(3) Certificate of Insurance shall be in the form as approved by Insurance Standards Office (ISO) and such Certificate shall clearly state all the coverage's required in this Section.

(4) Certificate of Insurance shall state that Owner and Agent are listed as additional insured on all appropriate policies.

(5) Copy of the endorsement or additional insured rider to the General Liability Policy.

(6) Registration Number of authorized Resident Agent.

Miscellaneous

(1) If Contractor requests in writing that insurance for special hazards be included in the property insurance policy, Owner shall permit Contractor to purchase such insurance, but the cost thereof shall be paid for by Contractor.

(2) Owner and Contractor waive all rights against each other for damages caused by fire or other perils to the extent covered by insurance, except such rights as they may have to the proceeds of such insurance held by Contractor as trustee. The Contractor shall require similar waivers by subcontractors and sub-subcontractors.

(3) If required in writing by any party in interest, Contractor, as trustee shall, upon the occurrence of an insured loss, give bond for the proper performance of its duties. It shall deposit in a separate account any money so received, and it shall distribute it in accordance with such agreement as the parties in interest may reach. If after such loss no special agreement is made, replacement of damaged work shall be covered by an appropriate Change Order.

(4) Owner, as trustee, shall have power to adjust and settle any loss with the insurers.

(5) If Owner finds it necessary to occupy or use a portion or portions of the work prior to Substantial Completion thereof, such occupancy shall not commence prior to a time mutually agreed to by Owner and Contractor and to which the insurance company or companies providing the property insurance once have consented by endorsement to the policy or policies. This insurance shall not be cancelled or lapsed on account of such partial occupancy. Consent of Contractor and the insurance company or companies to such occupancy or use shall not be unreasonably withheld.

C-4 NOTICE TO SECURE PERMITS AND UTILITY CONNECTIONS; NOTICE TO PROCEED

Once the Agreement is fully executed, Contractor will be given a notice to secure and pay for all required permits from all agencies with jurisdiction over the area in which the Project is located and to pay all required connection fees from all agencies supplying utilities to the Project.

Contractor is allowed thirty (30) calendar days from the time of this notice to secure and pay for those required permits and utility connections, if such connection fees are required before construction can start. Special permits such as tree removal, Water Management District, Dept. of Environmental Regulation, septic tank, etc., may be necessary before construction can start. If additional time is required, Contractor will request approval of a time extension for good cause for the purpose of obtaining any permit required prior to commencing construction on the site.

Upon paying for all required connections and securing the Building Permit, Contractor shall notify the Architect/Engineer and Owner. The Notice to Proceed to Mobilize on Site and to Proceed with Construction ("Notice to Proceed") will then be issued by Owner.

C-5 PUBLIC NOTICE

Immediately following receipt of Notice to Proceed as prescribed in Section C-4 hereinabove, Contractor shall post a notice in the following form in a conspicuous place on the Project site:

> "Notice is hereby made to all those concerned and affected that (Contractor's Name) is performing (Project Name, Project Number at Project Location).
>
> All parties furnishing labor, materials and/or equipment to said project are to provide notice of such in writing by certified mail to Owner at the (Owner's Address) within twenty (20) calendar days of first providing such labor, materials and/or equipment."

C-6 TIME OF COMPLETION AND LIQUIDATED DAMAGES

The work to be performed under the Agreement shall (i) be commenced within ten (10) calendar days after date of Notice to Proceed; (ii) attain Substantial Completion by the time set forth in the "Supplementary Terms and Conditions" (the "Substantial Completion Date"), and (iii) be finally complete within 30 days of the Substantial Completion Date.

Because failure to complete the Project in a timely basis will result in substantial injury to Owner, and as damages arising from such failure cannot be calculated with any degree of certainty, it is hereby agreed that if Substantial Completion does not occur by the Substantial Completion Date, Contractor shall pay to Owner as liquidated damages for such delay, and not as a penalty, the amount set forth in the "Supplementary Terms and Conditions" for each and every calendar day elapsing between the Substantial Completion Date and the date such substantial completion shall have been fully accomplished. Said liquidated damages shall be payable in addition to any excess expenses or costs payable by Contractor to Owner under Section C-40 ("Termination"), and shall not exclude the recovery of damages by Owner under other provisions of the Contract Documents, except for Contractor's delay. This provision of liquidated damages for delay shall in no manner affect Owner's right to terminate the contract as provided in Section C-40 or elsewhere in the Contract Documents. Owner's exercise of the right to terminate shall not release Contractor from its obligation to pay said liquidated damages in the amounts set out above.

In the event of termination of the Agreement by Owner prior to the Substantial Completion Date, Contractor shall be liable to Owner for the expenses for additional managerial and administrative services provided in Section C-40 and also for the per diem liquidated damages at the rate specified in the Agreement:

1. for each day it is in arrears in its work at the time of said termination as determined by the Architect/Engineer, and

2. for an additional thirty (30) calendar days, hereby stipulated and agreed to be the time it will require Owner to effect another contract for completion of the Project and for resumption of work thereon.

Provided, however, that the sum of 1 and 2 above shall not exceed the number of days beyond the Substantial Completion Date, or any reasonable extension thereof.

Owner may deduct from any balance retained by Owner, the liquidated damages for delay or termination, as the case may be, or such portions thereof as the retained balance will cover.

C-7 CONSTRUCTION SCHEDULES

Within twenty (20) calendar days after the date of Owner's issuance of a Notice to Proceed, Contractor shall prepare and submit to the Architect/Engineer a construction schedule in quadruplicate graphically depicting the activities contemplated to occur as a necessary incident to performance of the work required to complete the Project, showing the sequence in which Contractor proposes for each such activity to occur and the duration (dates of commencement and completion, respectively) of each such activity.

At least once each month, the Architect/Engineer will determine whether the schedule developed and submitted by Contractor meets the requirements stated above and whether the progress of the work complies with Contractor's schedule. Contractor shall provide an updated schedule with each request for partial payment. Failure of Contractor to develop, submit and conform to a construction schedule as contemplated herein shall be sufficient grounds for the Architect/Engineer to find Contractor in substantial default and certify to Owner that sufficient cause exists to terminate the Agreement or to withhold any payment.

Following development and submittal of the construction schedule as aforesaid, Contractor shall, at the end of each calendar month, or at such earlier intervals as circumstances may require, update and/or revise the construction schedule to show the actual progress of the work performed and the occurrence of all events affecting the progress of work already performed or yet to be performed in contrast with the construction schedule last submitted. Each such update and/or revision to the construction schedule shall be submitted to the Architect/Engineer in duplicate. Failure of Contractor to update, revise and submit the Construction Schedule as aforesaid shall be sufficient grounds for the Architect/Engineer to find Contractor in substantial default and certify to Owner that sufficient cause exists to terminate the Contract or to withhold payment to Contractor until a schedule or schedule update acceptable to the Architect/Engineer is submitted.

Contractor shall have the option of scheduling a Substantial Completion Date earlier than the date established by the Contract Documents; provided, however, in such event, such earlier Substantial Completion Date will be recognized by Owner only as a matter of convenience to Contractor and shall not change the date for Substantial Completion established by the Contract Documents or be otherwise binding on Owner or anyone under Owner's control; and provided further, however, in such event, should events occur during performance of the work necessary to complete the Project which would justify the granting to Contractor of an extension of the Contract Time pursuant to the provisions of the AIA Document, Contractor shall be entitled to receive only such an extension of Contract Time as is determined by the Architect/Engineer to be due Contractor as follows:

1. If the currently approved Contractor's schedule indicates completion ahead of the contractually established date for Substantial Completion, the time extension to the Agreement shall only be determined, when the total time directly affecting the critical path of the schedule is added to the end date of the schedule thereby making a new end date beyond the contractual completion date. The time extension will only be for the time between the currently approved contractual completion date and the new schedule end date.

2. If the currently approved Contractor's schedule indicates completion at or after the contractually established date for Substantial Completion, the time extension shall only be added to the contractually established date for the substantial completion and shall be determined by the Architect/Engineer as the portion of delay time directly affecting the critical path of the current approved contract schedule.

C-8 VERIFICATION OF OWNER'S SURVEY DATA

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

C-9 CONSTRUCTION SITE AND FACILITIES

Sanitary Provisions. Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of its employees as may be necessary to comply with regulations of the County or the Department of Health. No nuisance will be permitted.

Temporary Wiring. Contractor shall meet all safety requirements of the National Electric Code, Florida Department of Financial Services, Division of Worker's Compensation or local requirements. In addition, all wire shall be so sized that it is not over-loaded according to the National Electric Code, and any wire used shall be fused to adequately protect that wire according to the Code referred to. Contractor shall have an adequate number of outlets and each outlet shall be properly and clearly labeled with the maximum voltage and fuse protection. Where temporary lighting is used, outlet shall consist of weather proof socket insulated and provided with a locking type wire guard. All devices shall be properly grounded.

Storage and Work Areas. At the start of the operations Contractor shall make arrangements with the Architect/Engineer's field representative and Owner's representative for the assignment of storage and work areas. During construction Contractor shall maintain the areas in a neat condition.

Contractor's Field Offices. Trailers may be used for field offices, but their use as living quarters for personnel shall be limited to one staff member such as a night watchman or a superintendent.

Underground Utilities. Contractor shall meet all requirements of the United States Department of Labor Occupational Safety and Health Administration (OSHA) in the performance of work related to excavations for underground utilities, foundations and other subsurface work. Contractor shall conduct thorough training in OSHA standards and requirements on a continuing and regular basis throughout the execution of such work.

Cleaning. Contractor shall keep the site and surrounding areas reasonably clean and free of trash at all times. At Substantial Completion, the entire area shall be thoroughly cleaned, including all window glass, hardware, plumbing fixtures, electrical fixtures, tile work, etc., and shall be kept clean until final completion. Contractor shall replace all broken or defective glass and replace all air conditioning filters (any fixed grills or permanent filters shall be cleaned). If Contractor fails to clean up as required in this section, Owner may do so itself and charge the cost to Contractor.

C-10 DRAWINGS, SPECIFICATIONS, ETC. – COPIES, CHANGES, OWNERSHIP

Promptly after the Project is awarded to Contractor, the Architect/Engineer will provide Contractor with CAD plot and print files of all Project drawings and specifications. Contractor shall immediately indicate plainly and conspicuously on the field set of drawings and at appropriate paragraphs in the specifications, all changes or corrections made by Addenda and Change Orders as they are issued.

The Architect/Engineer is presumed to be the author and owner of all drawings and specifications prepared by it, and Contractor may not use those documents except as authorized herein. The provisions of Article 1.6 of the AIA Document (”Ownership and Use of Drawings, Specifications and Other Instruments of Service”) shall apply.

C-11 SHOP DRAWINGS

Shop drawings shall be submitted for manufactured or fabricated materials as called for in the separate specification sections. Drawings shall be fully identified by project name, location, supplier's name, date, drawing number, specifications section reference, etc. Contractor shall submit, with such promptness as to cause no delay in its work, or in that or any other Contractor, four (4) copies (in addition to those copies necessary for its own requirements) of all shop drawings, and schedules, required for the work of the various trades, to the Architect/Engineer for approval. Contractor shall make no deviation from the approved drawings or the changes made thereto by the Architect/Engineer, if any. It shall be the responsibility of Contractor to properly schedule the submission of shop drawings for approval to allow adequate time for checking of drawings, manufacture and shipment of items to job site in sufficient time to prevent delay in Progress Schedule.

It shall also be the responsibility of Contractor to coordinate the preparation of shop drawings of items, which will be furnished by more than one manufacturer but are designed to interface when installed.

Shop drawings submitted to the Architect/Engineer for its approval shall first be checked and approved by Contractor, the prima facie evidence of which shall be a "checked" stamp marked "Approved", or "Approved as Noted" on each copy of each shop drawing, placed thereon by Contractor. Shop drawings received without Contractor's "checked" stamp will be cause for immediate return without further action. Each drawing correctly submitted will be checked by the Architect/Engineer and marked by him in one of the following ways:

1) Approved as drawn.
2) Approved as noted.
3) Returned for correction.
4) Not approved.

Submission and Approval Of Shop Drawing and Sample Schedule
If and when required by the Architect/Engineer, Contractor shall prepare and submit in triplicate to the Architect/Engineer a completely itemized Schedule of Shop Drawings, brochures and other descriptive literature, listing each and all such items as required under these specifications, which schedule shall indicate for each required item:

1) Identification as to pertinent Specification Division.
2) Item(s) involved.
3) Name of pertinent subcontractor or supplier and the name of pertinent manufacturer.
4) Schedule date of delivery of pertinent items to the Project.

The subcontractors for all phases of the Project shall submit through the Contractor complete brochures covering all materials and/or equipment proposed for use in the execution of the work as required by their respective Divisions of the Specifications. These brochures shall be indexed and properly cross referenced to the plans and specifications for easy identification.

All shop drawings, setting drawings, material brochures, samples and/or color selection materials, which are required and are not included in the foregoing shall be submitted via the Contractor. Insofar as is possible or practical, all shop drawings or descriptive literature of equipment for the mechanical or electrical trades shall be submitted in a complete brochure for each trade as soon as possible after Notice to Proceed is executed.

Owner will not grant time extension based on delays due to improper scheduling of work; and Owner, at its discretion, may withhold progress payments until such time as these requirements are fully satisfied.

C-12 REFERENCE TO A.S.T.M. OR FEDERAL SPECIFICATIONS

Where reference is made to the Standard Specifications of the American Society for Testing and Materials (A.S.T.M.) or to the United States Government Federal Specifications, or to other standard specifications of other associations or trade organizations, in connection with the required quality of materials, methods, etc., then the applicable specifications shall be of the latest revised edition effective as of the date bids are opened by Owner, unless otherwise expressly provided in the Contract Documents.

C-13 MANUFACTURER'S SPECIFICATIONS

Where the name of a concern or manufacturer is mentioned on drawings or in specifications in reference to a required service or product, and no qualifications or specification of such is included, then the material gauges, details of manufacture, finish, etc., shall be in accordance with its standard practice, direction or specifications. Contractor shall be responsible for any infringement of patents, royalties, or copyrights, which may be incurred thereby.

C-14 TESTS AND INSPECTIONS

The provisions of AIA Document Article 13.5 ("Tests and Inspections"), shall apply, subject to the other terms in this the Agreement and the following modifications: (i) delete last sentence of Article 13.5.1; and (ii) add the following:

Inspections: The Project will require detailed code compliance inspections by the local authorities with jurisdiction over the area in which the Project is located. The disciplines normally include, but are not necessarily limited to, structural, mechanical, electrical, plumbing, electrical, fire safety and general building. Contractor shall make all permits, drawings, specifications, previous inspection reports, and change documents available to Code Inspectors. Contractor shall provide a copy of each inspection report to the Architect/Engineer in a timely fashion.

Contractor has responsibilities relative to all types of inspections and is responsible for contacting all of the inspecting entities to determine its responsibilities. Each inspecting entity imposes unique and separate responsibilities. One inspection from an entity will not substitute for an inspection from another entity. The Architect/Engineer may also have responsibilities, relative to inspections.

Owner and/or the occupying state agency representatives may perform their own inspections upon reasonable notice.

Testing: The Architect/Engineer shall designate the tests which shall be made, and the Contractor shall not obligate the Owner for tests without the Architect/Engineer's approval.

Certain tests are required as part of the Agreement and shall be paid for by Contractor. These are specifically named in the technical specifications and the types of tests are as follows:

(1) Where tests are required by the technical specifications for materials, methods or equipment, Contractor shall pay the cost of initial tests to prove qualities and determine conformance with specification requirements, e.g., mill tests on cement and steel; load testing of piling; sieve analysis and calorimetric tests on sand; strength tests for determining proportions of materials or concrete, moisture content and sound transmission tests of concrete blocks, etc;

(2) If Contractor proposes substitute materials or equipment, Contractor shall pay for all tests requested by Architect/Engineer to ensure the specification requirements are satisfied;

(3) If materials or workmanship are used which fail to meet specification requirements Contractor shall pay the costs of all coring or other tests deemed necessary by Architect/Engineer to determine the safety or suitability of the material or element;

(4) The Contractor shall pay for all testing costs, including but not limited to; power, fuel, equipment and systems for proper operation such as electrical, plumbing, heating ventilation, air conditioning, elevator, dumbwaiters and conveyors, etc.

All other tests performed at the direction of the Architect/Engineer or the Owner shall be paid for by the Owner, except to the extent that the costs of performing such tests are otherwise chargeable to the Contractor under provisions of the Contract Documents.

C-15 APPROVAL OF MATERIALS

A list of all materials, equipment, etc., together with manufacturer's drawings and catalog information shall be submitted to the Architect/Engineer for approval prior to ordering material or equipment but not later than forty-five (45) calendar days after receipt of Notice to Proceed. Information submitted shall show the capacity, operating conditions and all engineering data and descriptive information necessary for comparison and to enable the Architect/Engineer to determine whether same meets specifications. The Architect/Engineer's approval will not relieve Contractor of the responsibility for performance of any terms of the Agreement.

If the submittals reflect any changes from the plans or specifications, these changes should be clearly indicated by Contractor.

C-16 PROHIBITED MATERIALS - ASBESTOS

Per Section 255.40, Florida Statutes, the use of asbestos or asbestos-based fiber materials is prohibited in any buildings, construction of which is commenced after September 30, 1983, which is financed with public funds or is constructed for the express purpose of being leased to any governmental entity.

C-17 ITEMS PRODUCED BY PRISON INDUSTRIES - PRIDE

The following language is mandated by Section 946.515, Fla. Statutes:

It is expressly understood and agreed that any articles which are the subject of, or required to carry out, this contract shall be purchased from the corporation identified under chapter 946, F.S., in the same manner and under the same procedures set forth in section 946.515(2) and (4); and for purposes of this contract the contractor shall be deemed to be substituted for the owner insofar as dealings with such corporation are concerned.

Owner will use good faith efforts to notify Contractor of any items required to be purchased from PRIDE under this section. Contractor may obtain additional information about products and services from PRIDE at http://www.pride-enterprises.org.

C-18 SUBSTITUTIONS

Substitutions for a specified system, product or material may be requested of the Architect/Engineer and the Architect/Engineer's written approval must be obtained before substitutions will be allowed. All requests for substitutions should be submitted within forty-five (45) days after award of Contract. Substitutions requested after this date may receive no consideration.

In making requests for substitutions Contractor shall list the particular system, product, or material he wishes to substitute, the justification for such a request, and the amount he will add or deduct from the Contract Sum if the substitution is authorized by Owner and approved by the Architect/Engineer.

C-19 CONSTRUCTION CLIMATE CONTROL

It shall be the responsibility of Contractor to provide at its expense, the power, fuel and equipment necessary to maintain climatic conditions and

humidity when specified, required for work in progress, or required to protect materials, finishes, equipment or systems installed until the final acceptance of the Project by Owner.

C-20 AS-BUILT DRAWINGS

During the progress of the work, Contractor shall require the plumbing, mechanical, air conditioning, heating, ventilating, elevator, and electrical subcontractors to record on their field sets of drawings the exact locations, as installed, of all conduit, pipe and duct lines whether concealed or exposed which were not installed exactly as shown on the contract drawings. Contractor shall also record all drawing revisions that have been authorized by Change Order that effect wall or partition locations, door and window locations and other template changes. The exact routing of conduit runs shall be shown on these drawings.

Upon substantial completion of the work, this data shall be recorded to scale using AutoCAD, version 2010 or later. Two (2) sets of disk files will be furnished to Contractor by the Architect/Engineer, but cost shall be borne by Contractor. Each drawing shall be bound, without external references, noted "As Built" and shall bear the date and name of the subcontractors that performed the work. Where the work was installed exactly as shown on the contract drawings the sheets shall not be disturbed except as noted above.

Contractor shall review the completed As-Built drawings and ascertain that all data furnished on the drawings are accurate and truly represent the work as actually installed. When ductwork, manholes, boxes, underground conduits, plumbing, hot or chilled water lines, inverts, etc. are involved as part of the work, Contractor shall furnish true elevations and locations, all properly referenced by using the original bench mark used for the institution or for this Project. The disks shall be submitted to the Architect/Engineer when completed, together with two sets of black-line prints for certification and forwarding to Owner, at the time of final completion.

C-21 GUARANTEES AND OPERATING INSTRUCTIONS

Contractor shall provide full cooperation to Owner in the production of video instructions for the operation and maintenance of all HVAC, fire alarm, sprinkler, irrigation, computer and other systems essential to efficient utilization of the building grounds. Owner personnel or its agents shall perform the actual taping, editing and production of such instructional media. Cooperation of the on-site representative of Contractor shall be the responsibility of Contractor, whose representatives are to coordinate instructional activities with Owner and its personnel or agents.

All work performed by Contractor in completing the Project shall be guaranteed by Contractor against all defects resulting from the use of materials, equipment and workmanship for a period of one year from the date of Substantial Completion of the Project.

If, within any guarantee period, repairs or changes are required in connection with the guarantee work, which in the opinion of the Architect/Engineer is rendered necessary as a result of the use of materials, equipment or workmanship which are defective or inferior or not in accordance with the terms of the Contract, Contractor shall, promptly upon receipt of notice from Owner and without expense to Owner, proceed to:

Place in satisfactory condition in every particular all of such guaranteed work, correct all defects therein; and

Make good all damages to the structure or site or equipment or contents thereof, which, in the opinion of the Architect/Engineer, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract Documents; and

Make good any work or materials or the equipment and contents of structures or site disturbed in fulfilling any such guarantee.

If Contractor, after receipt of any such written notice, fails within seventy-two (72) hours to commence at the job site with performance of the work necessary to remedy all defects in the work described in such notice so as to provide Owner with the Project completed in accordance with all requirements of the Contract Documents, or fails to complete the performance of such remedial work within a reasonable time after commencing same, Owner shall be entitled to have such defective work remedied on the account of Contractor and its Surety, in which event, Contractor and its Surety shall be fully liable for all costs and expenses reasonably incurred by Owner in having such defective work remedied. Contractor shall be responsible for collecting, identifying, indexing, and collating the following materials from the sub-contractors, and will deliver four copies of the finished document to the Architect/Engineer for checking of correctness.

Complete equipment diagrams, operating instructions, maintenance manuals, parts lists, wiring diagrams, pneumatic and/or electrical control diagrams, test and balance reports, inspection reports, guarantees and warranties addressed to the State Agency for which the construction is being performed, as applicable, for each and every piece of Fixed Equipment furnished under this Agreement to be supplied in a ring binder, hard-cover book, properly indexed for ready reference. Also, specific information regarding manufacturer's name and address, nearest distributor and service representative's name, address, office and cell phone number, make and model numbers, operating design and characteristics, etc., will be required. All information submitted shall be updated to reflect existing conditions.

Subsequent to Substantial Completion and receipt of As-Builts, Operations and Maintenance Books but prior to the date of Final Acceptance, Contractor and/or Subcontractor shall provide a competent and experienced person (or persons) thoroughly familiar with the work for a reasonable period of time to instruct the State Agency personnel in operation and maintenance of equipment and control systems.

This instruction will include normal start-up, run, stop, and emergency operations, location and operation of all controls, alarms and alarm systems, etc. The instruction will include tracing the system in the field and on the diagrams in the instructions so that operating personnel will be thoroughly familiar with both the system and the data supplied.

C-22 CHANGES AND DELAYS IN THE WORK

During the course of Contractor's performance under the Agreement, certain events may occur which have the effect of changing the conditions, nature or extent of the work to be performed as specified in the Bidding Documents. The occurrence of these events may result in the issuance of a Change Order and/or delays in the performance of work.

A. Change Orders. Change Orders may cause Contractor to incur greater or less cost and expense to perform the work than planned to be incurred in Contractor's successful bid, in which event Contractor or Owner shall respectively be entitled to either an increase or decrease in the Contract Sum to the extent such greater or less cost and expense results. The party entitled to the benefit of any such adjustment to the Contract Sum shall, within twenty-one (21) calendar days from the first occurrence of such event(s), present written demand therefore on the other party through Architect-Engineer. Should Contractor and Owner be unable to settle and dispose of such demand within thirty (30) calendar days from the date any such claim is presented, then such

demand shall be referred to Architect-Engineer for determination, which determination shall be final and binding unless appealed in accordance with applicable provisions of this Agreement. The amount of any increase or decrease in the Contract Sum shall be governed and controlled by strict adherence to the following guidelines and limitations, and neither party shall receive any monetary consideration beyond that which is authorized below.

All adjustments to the Contract Sum resulting from a change in the work shall be determined by the measure of actual or estimated as the case may be, out-of-pocket costs and expenses incurred or spared by Contractor for labor, materials, equipment, and equipment rental, plus overhead and profit thereon, for performing the changed work.

(1) Labor costs shall be inclusive of all direct job site cost for estimation, laying out, mechanics' wages and laborers' wages, together with all payroll taxes, payroll assessments, and insurance premiums paid for such labor.

(2) All material costs, equipment costs and equipment rental costs shall be trade discount rates, plus State Sales Tax, where applicable.

(3) Overhead and profit shall be inclusive of all project management, project administration, superintendence, project coordination, project scheduling and other administrative support functions and services, whether performed on the job site or off the job site and general support equipment. Overhead and profit shall be determined as follows:

a. Overhead and profit for the Contractor shall be calculated at the rate of 15% of the labor, material, equipment and equipment rental costs, incurred or spared, as measured under the preceding paragraphs for changes in the work performed by the officers, employees or subsidiaries of Contractor.

b. Overhead and profit for the Contractor shall be calculated at the rate of 7.5% of the Contractor's sub-contractors' actual labor, material, equipment and equipment rental costs, incurred or spared, as measured under the preceding paragraphs, plus an additional 15% of all such costs, for overhead and profit to the Contractor's sub-contractors, for all changes in the work performed by the officers, employees or subsidiaries of the Contractor's sub-contractors.

(4) In addition, all adjustments to the Contract Sum resulting from a change in the work shall include all out-of-pocket expenses, incurred or spared, in performing the changes in the work for:

a. Paying the premiums required to obtain Performance Bonds and Labor and Material Payment Bonds called for by the Contract Documents;

b. Paying the fee(s) required for licenses or permits called for by changes in the work;

c. Paying for delivery of materials or equipment to the job site;

d. Paying for storage of materials or equipment before use thereof in performing changes in the work, and

e. Paying for testing required by the changes in the work.

(5) In the event Contractor demands an adjustment in the Contract Sum, such demand shall be accompanied by paid receipts or other such written evidence satisfactory to Owner itemizing the costs and expenses incurred as a result of the event(s) constituting the changes in the work.

B. Delays. Contractor may request an equitable adjustment in the Contract Sum to compensate Contractor for direct and actual overhead costs (excluding profits) incurred as a result of a delay in Contractor's performance under this Agreement if the delay (i) occurs after the Notice to Proceed is issued, (ii) is not due to a Change Order, (iii) is attributable primarily to acts or omissions of Owner, and (iv) in combination with other such compensable delays, extends for more than 10 calendar days. Contractor's exclusive remedy for all other delays in performance of the Agreement caused by events beyond its control shall be a claim for equitable adjustment in the Contract Time.

C. Limitation of Remedies. Contractor's remedies for delays in the progress of work under this Agreement, or for any changes in such work, shall be limited to those provided in this Section. All requests and claims for compensation and damages must be submitted as provided in Section C-41 ("Claims and Disputes"). No provision of this Agreement shall be construed as a waiver of sovereign immunity by Owner.

C-23 PROGRESS PAYMENTS

A. The provisions of AIA Document Articles 9.1 through 9.7 ("Payments and Completion") shall apply, subject to the requirements of this section and the following modifications: (i)Delete Article 9.3.1.1; (ii) Delete from the sixth line of Article 9.7.1 the following: "...or awarded by arbitration"; and (iii) Delete the last sentence of Article 9.7.1 in its entirety.

B. Funding for this Project may have been appropriated by the State Legislature or furnished by Federal Grant to a particular State Agency, and therefore payments to Contractor may be made by the government agency based on approval of each payment by Owner.

Based upon Certificate of Partial Payment submitted to the Architect/Engineer by Contractor and Certificates of Payment issued by the Architect/Engineer and accepted by Owner, Owner shall make progress payments to Contractor against the account of the Contract Sum in accordance with the following:

1. Within thirty (30) calendar days from Owner's receipt and acceptance of a Certificate of Payment, Owner shall pay, or cause to be paid to Contractor, 95% of the portion of the Contract Sum properly allocable to labor, materials and equipment incorporated into the work, and 95% of that portion of the Contract Sum properly allocable to materials and equipment suitably stored at the site or at some other locations agreed upon in writing by the parties, less the aggregate of previous payments. Owner shall promptly make payment to Contractor, unless Owner has grounds, pursuant to Section 255.078(3), Florida Statutes for withholding the payment of retainage. If Owner makes payment of retainage to Contractor for labor, services, or materials supplied by one or more subcontractors or suppliers, Contractor shall timely remit payment of such retainage to those subcontractors and suppliers.

2. Contractor shall promptly pay each Subcontractor in accordance with Sections 287.0585 and 255.078, Florida Statutes, upon receipt of payment from Owner out of the amount paid to Contractor on account of such Subcontractor's work, the amount to which said Subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to Contractor on account of such Subcontractor's work.

3. The Architect/Engineer may, on request at its discretion, furnish to a Subcontractor, if practical, information regarding the percentages of completion of the amount applied for by Contractor and the action taken thereon by the Architect/Engineer on account of work done by such Subcontractor.

4. Neither Owner nor the Architect/Engineer shall have any obligation to pay or to see to the payment of any monies to any Subcontractor except as may otherwise be required by law.

5. No Certificate of Payment, nor any progress payment, nor any partial or entire use of occupancy of the Project by Owner, shall constitute an acceptance of any work not in accordance with the Contract Documents.

C. Contractor shall request such compensation by submitting:

1. a properly completed and notarized Certificate of Partial Payment on the form enclosed as Exhibit 4.

2. a properly completed Contractor's Status Report of Minority & Disabled Veteran's Business Enterprise on the form enclosed as Exhibit 6. This form must be submitted even if no minorities are reported.

3. a Schedule of Contract Values as described below.

D. Contractor shall, within ten (10) calendar days from date of Agreement, submit to the Architect/Engineer for approval three copies of a Schedule of Contract Values which will reflect the estimated cost of each subdivision of work of each specification section, further detailed by Subcontractor item, and utilizing the Construction Specification's Institute "Masterformat Section Numbers". The value of each item shall include a true proportionate amount of Contractor's overhead and profit. The sum of all such scheduled values shall equal the Contract Sum as evidenced by the Agreement.

The approved Schedule of Contract Values will accompany and support Contractor's periodic Certificate of Partial Payment and shall indicate the value of suitably stored material as well as labor performed and materials incorporated into the work for each subdivision of the schedule during the period for which the requisition is prepared.

The Schedule of Contract Values form approved by the Owner will be used to present this and other pertinent information which will facilitate the processing by Owner's representatives of Contractor's Certificate of Partial Payment.

C-24 FINAL PAYMENT

The provisions of AIA Document Articles 9.8 through 9.10 ("Payments and Completion") shall apply, subject to the requirements of this section and the following modification: (i) Delete from Article 9.9.1 the words "provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the work."

Within thirty (30) calendar days from the date of Contract Completion, Owner shall pay or cause to be paid to Contractor, the entire unpaid balance of the then Contract Sum, less the amount of any sums which continue to be retained to satisfy the cost of performing any change in the work which is the subject of any claim or dispute and which has not yet been satisfactorily performed by Contractor, provided that the parties have not otherwise stipulated in the Certificate of Substantial Completion, and provided further that the work has been satisfactorily completed, Contractor's obligations under the Contract have been fully performed, and a final Certificate for Payment has been issued by the Architect/Engineer (See Section C-23, Progress Payments).

Contractor's application for final payment shall be accompanied by the following:

1. A "Rush" Routing Transmittal (form is provided on DMS website).

2. Certificate of Partial Payment (4 copies with original signatures and original seals) noted as Final (Exhibit 5).

3. Final Schedule of Contract Values.

4. Consent of Surety to make Final Payment (Signed & Sealed)

5. Power of Attorney from Surety for Release of Final Payment (Signed, Sealed, and dated same as Consent of Surety)

6. Affidavit of Contract Completion (Exhibit 6)

   (a) Page 1 completed by the General Contractor (Original + 3 copies)
   (b) Page 2 completed by Architect/Engineer (Original + 3 copies)

7. Certificate of Occupancy from the authority having jurisdiction.

8. Notice of Release of Lien from each Sub-Contractor who has filed Notices to Owner

9. Contractor's Guarantee of Construction for One (1) year from the date of Substantial Completion.

10. Copy of the Approval by the Architect/Engineer and the Transmittal to the State Agency of Manuals, Shop Drawings, As-Builts (2 paper sets and 2 CDs in AutoCAD .dwg format, version 20010 or later), Brochures, Warranties, and List of Subcontractors, with telephone numbers and addresses.

11. Verification that State Agency personnel have been trained in the operation of their new equipment for each System; HVAC, Controls, Fire Alarm, etc. submit Attendance Lists.

12. Fully executed Roof Warranty (if applicable) in the name of the State Agency for whom the Project is being constructed.

13. Other special warranties as required by specifications, in the name of the State Agency for whom the Project is being constructed.

14. Certificate of Specification - No Prohibited Hazardous Material

C-25 LATE PAYMENT RIGHTS

Upon receipt of an Certificate of Partial Payment, Owner has thirty (30) days to inspect and approve the work. If payment is not issued within 40 days after the Certificate of Partial Payment is received and the work is inspected and approved, interest at the rate specified in Section 215.422, Florida Statutes will be due and payable in addition to the Certificate of Partial Payment amount. Interest penalties of less than one (1) dollar will not be enforced unless Contractor requests payment. Certificate of Partial Payment which have to be returned because of preparation errors will result in a delay in the payment. The payment requirements do not start until a properly completed Certificate of Partial Payment is provided to Owner or Architect/Engineer.

A Vendor Ombudsman has been established within the Department of Financial Services. The duties of this individual include acting as an advocate for vendors who may be experiencing problems in obtaining timely payment(s) from a state agency. The Vendor Ombudsman may be contacted at the Department of Financial Services website.

C-26 DUTIES OF CONTRACTOR

The provisions of AIA Document Article 3 (“Contractor”), shall apply subject to the other terms of the Agreement and the following modifications:

1. Add the following to Article 3.3.2: "Should the Architect/Engineer find any person(s) employed on the Project incompetent, unfit or otherwise objectionable for his duties and so certify the facts to the Contractor, the Contractor shall immediately cause the employee to be dismissed and said employee shall not be re-employed on this Project without written consent of the Architect/Engineer."

2. Add the following to Article 3.8.1: "If directed by the Architect/Engineer the Contractor shall solicit not less than three bids for the item(s), the cost of which is provided for by a specified allowance sum. The Contractor shall purchase the item(s) from one of the three Bidders as directed by the Architect/Engineer."

3. Delete Article 3.10 (“Contractor’s Construction Schedules”) and refer instead to Section C-7 above.

4. Add the following to Article 3.14: "All cutting and patching work shall blend in and be plumb and square. The quality of materials used shall be the same or surpass those used in the adjacent existing construction."

C-27 DUTIES OF ARCHITECT/ENGINEER'S REPRESENTATIVE

(If one is authorized by Owner)

A. The provisions of AIA Document Article 4.2 (“Architect’s Administration of the Contract”), shall apply subject to the other terms of the Agreement and the following modifications:

(i) Add the following to Article 4.2.5: "The authorized representatives and agents of the Architect/Engineer, Owner, and the United States Federal Agencies providing monies in the form of grant-funds or loans and such other persons as the Owner may designate shall have access to and be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, other relevant data and records wherever they are in preparation and progress. The Contractor shall provide proper facilities for such access, inspections and, when required, exact duplicate copies of the aforementioned data shall be furnished."

(ii) Delete last sentence of Article 4.2.10 and add the following: "The duties, responsibilities and limitations of authority of any such Project Representative shall be as set forth in the Contract Documents."

B. The Duties of the Architect/Engineer's Representative(s) shall include but not be limited to the following:

1. Assist Contractor in obtaining interpretation of the Contract Documents from the Architect/Engineer.

2. Conduct on-site observations for determining conformance to the Contract Documents in regard to work, materials, equipment, etc.

3. Request additional details and/or information from the Architect/Engineer when needed by Contractor.

4. Evaluate suggestions and/or modifications submitted by Contractor and transmit these to the Architect/Engineer with recommendations.

5. Anticipate problems, which may create delays and problems in construction and report these to Contractor and Architect/Engineer for solution.

6. Maintain official relationship only with the General Contractor Job Superintendent(s) and communicate problems to him regardless of which sub-contractor(s) work is involved.

7. Attend all required construction conferences and participate actively in discussions of the Project.

8. When authorized by the Architect/Engineer conduct tests and inspections as required by the Contract Documents and record results of such tests and inspections.

9. Maintain a daily log of Project activity including but not limited to: hours on the job site, weather conditions, daily construction activity, number of persons in each trade on the site, general observations, written and verbal directives to Contractor and visits of governmental officials.

10. If, upon inspections or observations, work is found not to be in accordance with Contract Documents, advise the Architect/Engineer verbally and in writing. Consult with the Architect/Engineer for further directions if Contractor does not correct work as directed by the Architect/Engineer.

11. Check that tests and inspections to be performed by others, in addition to those performed by Architect/Engineer's Representatives and/or the Architect/Engineer, are actually performed; in accordance with the Contract Documents.

12. When requested, accompany all State, Federal officials on inspections of construction and record the inspection in the log.

13. Cooperate with Owner's Project Manager or Inspectors and provide them with all requested information about the Project.

14. Maintain in an orderly manner, files of correspondence, reports of job conferences, shop drawings and samples, copies of contract documents, change orders, addenda, supplementary drawings, and job log.

15. Review requisitions for payment submitted by Contractor and transmit to the Architect/Engineer with recommendations.

16. Participate in the inspections of construction with the Architect/Engineer and Owner's Project Manager at regular intervals and at Substantial Completion and provide Architect/Engineer with information as to work which is not complete, defective, or not in accordance with Contract Documents.

17. Refer all communications from State Agencies to Owner's Project Manager and to the Architect/Engineer.

18. Copy Owner's Project Manager on all correspondence related to the Project.

19. Review plans, specifications and shop drawings on a regular basis. Be alert to errors and omissions on the Contract Documents and construction problems before they occur and advise the Architect/Engineer when discovered.

20. Advise Contractor and Architect/Engineer of work being performed with unapproved shop drawings or without shop drawings when such shop drawings are required by specifications.

21. Check materials and equipment delivered to the job site against specifications, approved samples, shop drawings and related correspondence. If in conflict, advise Contractor and/or Architect/Engineer.

22. Check that Contractor is maintaining a record of notated drawings of As-Built conditions, when As-Built drawings are specified to be provided.

23. When necessary, act as liaison between Contractor and the State Agency who will occupy the Project in the coordination of the State Agency's requirements to Contractor(s) schedule.

C. The Architect/Engineer's Representative is not authorized to do the following:

1. Authorize deviations from the Contract Documents (unless approved by Architect/Engineer).

2. Expedite the work for Contractor(s).

3. Advise Contractor on building techniques or scheduling.

4. Approve Shop Drawings.

5. Issue Certificate for Payment.

6. Approve substitutions.

7. Interpret the Contract Documents except when obviously clear.

D. The Architect/Engineer's Representative should not:

1. Get involved in disputes or problems between subcontractor and subcontractor.

2. Get involved in disputes or problems between Contractor and subcontractor.

3. Offer gratuitous advice to Contractor or subcontractors on how to perform the work whether solicited from Contractors or not.

4. Communicate with State Agency's representative in any official way except as noted in Item A-23 above.

5. Make vague and unclear log entries as to the acceptability of Contractor's work. If unacceptable and not corrected properly and in a timely way, the condition should be entered into the job log clearly as a statement made with follow-up written communication to the Architect/Engineer.

6. Order a work stoppage except in extreme emergencies and except under conditions authorized only by the Architect/Engineer.

C-28 DUTIES OF OWNER'S CONSTRUCTION REPRESENTATIVE

(If one is authorized by Owner. This Representative is NOT a State Building Code Inspector)

A. The duties of Owner's Construction Representative shall include but not be limited to the following:

1. Be present at the site at all times when construction is being performed and conduct daily on-site observations for determining conformance to the Contract Documents in regard to work, materials, equipment, etc.

2. Anticipate problems, which may create delays and problems in construction and report these to Owner's Project Manager for solution.

3. Attend all construction conferences.

4. When authorized by Owner's Project Manager, conduct inspections as required by the Contract Documents and record results of such inspections.

5. Maintain a daily log of Project activity including but not limited to: hours on the job site, weather conditions, daily construction activity, number of persons in each trade on the site, general observations, written and verbal directives to Contractor and visits of governmental officials and the Architect/Engineer.

6. If, upon inspection or observations, work is believed not to be in accordance with Contract Documents, advise Owner's Project Manager verbally and in writing.

7. Check that tests and inspections to be performed by others, in addition to those performed by Architect/Engineer's Representative and/or the Architect/Engineer are actually performed in accordance with the Contract Documents.

8. When requested, accompany all State and/or Federal officials on inspections of construction and record the inspection in the log.

9. Cooperate with Owner's Project Manager and provide them with all requested information about the project. The Owner's Project Manager can provide or direct them to the Architect/Engineer for assistance where appropriate.

10. Maintain in an orderly manner, files of correspondence, reports of job conferences, shop drawings and samples, copies of contract documents, change orders, addenda, supplementary drawings and job log.

11. Review requisitions for payment submitted by Contractor via the Architect/Engineer and transmit to Owner's Project Manager with recommendations.

12. Participate in the inspections of construction with Owner's Project Manager at regular intervals and at substantial completion and provide Owner's Project Manager with information as to work which he feels is not complete, defective, or not in accordance with Contract Documents.

13. Refer all Communications from State Agency that will occupy the Project to Owner's Project Manager.

14. Copy Owner's Project Manager on all correspondence related to the Project.

15. Review plans, specifications and shop drawings on a regular basis. Be alert to errors and omissions on the Contract Documents and construction problems before they occur and

advise Owner's Project Manager when he feels problems exist.

16. Advise Owner's Project Manager when he observes work being performed with unapproved shop drawings or without shop drawings when such shop drawings are required by specifications.

17. Check materials and equipment delivered to the job site against specifications, approved samples, shop drawings and related correspondence. If believed to be in conflict, advise Owner's Project Manager.

18. Check that Contractor is maintaining record notated drawings of as-built conditions, when as-built drawings are specified to be provided.

B. Owner's Construction Representative is not authorized to do the following:

1. Authorize deviations from the Contract Documents.

2. Expedite the work for Contractor.

3. Advise Contractor on building techniques or scheduling.

4. Approve Shop Drawings.

5. Issued Certificate for Payment.

6. Approve Substitutions.

7. Interpret the Contract Documents for Contractor.

C. Owner's Construction Representative should not:

1. Get involved in disputes or problems between Subcontractor and Subcontractor.

2. Get involved in disputes or problems between Contractor and Subcontractor.

3. Offer gratuitous advice to Contractor and Subcontractors on how to perform the work whether solicited from Contractors or not.

4. Communicate with State Agency's representative in any official way.

5. Make vague and unclear log entries as to the acceptability of Contractor's work. If unacceptable and not corrected properly and in a timely way, the conditions should be entered into the job log clearly as a statement made with follow-up written communications to Owner's Project Manager.

6. Order a work stoppage except in extreme emergencies affecting Life Safety.

C-29 HARMONY

Contractor is advised and hereby agrees that he will exert every reasonable and diligent effort to assure that all labor employed by Contractor and its Subcontractors for work on the Project shall work in harmony with and be compatible with all other labor being used by building and construction contractors now or hereafter on the site of the Project.

Contractor further agrees that this provision will be included in all subcontracts of the Subcontractor as well as in Contractor's own contract; provided, however, that this provision shall not be interpreted or enforced so as to deny or abridge, on account of membership or non-membership in any labor union or labor organization, the right of any person to work as guaranteed by Article 1, Section 6 of the Florida Constitution.

C-30 CONTRACTOR'S EXPERIENCE/FINANCIAL STATEMENT

Contractor represents and warrants that any information provided by Contractor regarding their firm's experience and financial statement to qualify for award of this Project, was accurate and correct when submitted, and that no major changes have occurred since it was submitted. Contractor understands and agrees that materially inaccurate information may result in termination of this Agreement at Owner's option. Contractor shall not change the principals or supervisory personnel without the written consent of Owner.

C-31 ESTABLISHMENT OF A LOCAL OFFICE

Unless waived by Owner for good cause, Bidder must agree to establish or have an active office, or an ongoing project, located within 300 road miles of the Project site.

C-32 CONTRACTOR'S SUPERVISION OF PROJECT

If the Contract Sum exceeds $500,000 the contractor must agree to provide field (on-site) supervision (through a named superintendent) for all trade subcontractors on the project. In addition, the contractor shall assign and name a supervisory employee to provide scheduling direction to the entire project. Supervisory employees (including field superintendents, foreman and schedulers at all levels) must have been employed in a supervisory (leadership) capacity of a substantially equivalent level on a similar project for at least two years within the last five years. The contractor shall include a resume of experience for each of those proposed supervisory employees.

C-33 CONTRACTOR'S WORK FORCE

The provisions of AIA Document Article 5 ("Subcontractors") shall apply, subject to the following modification: (i) Add the following to Article 5.2.1: "The Contractor shall not remove or replace subcontractors listed in his bid subsequent to the lists being made public at the bid opening, except upon good cause shown and only when approved in writing by the Owner."

Also, if the Contract Sum exceeds $500,000, Contractor will perform no less than 15% of the management and construction work utilizing its own employees. The percentage shall be calculated dividing the estimated cost of labor deployed by Contractor on the Project (including overhead and profit), by the total estimated labor costs for the Project.

C-34 UNAUTHORIZED ALIENS – CHECKS THROUGH E-VERIFY

The Department shall consider the employment by any contractor of unauthorized aliens a violation of section 274 of the Immigration and Nationality Act. Such violation shall be cause for unilateral cancellation of this Agreement.

Pursuant to the State of Florida, Office of the Governor, Executive Order Number 11-116, Contractor will utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of: (a) all persons employed during the term of the Contract by Contractor to perform employment duties within Florida within 3 business days after the date of hire; and (b) all persons (including subcontractors) assigned by Contractor to perform work pursuant to the

Contract with the Department within 90 calendar days after the date the Contract is executed or within 30 days after such persons are assigned to perform work pursuant to the Contract, whichever is later.

C-35 APPRENTICES

If the Contractor employs apprentices on the Project, the behavior of Contractor and Owner shall be governed by the provisions of Chapter 446, Florida Statutes, and by applicable standards and policies governing apprentice programs and agreements established through the Department of Education, State of Florida. The Contractor will include a provision similar to the foregoing sentence in each subcontract.

Contractor shall have the option of listing all available job vacancies with the local Job Service Florida office in order to take advantage of local pools of unemployed qualified construction personnel.

C-36 PUBLIC ENTITY CRIME INFORMATION STATEMENT

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for Category Two for a period of 36 months from the date of being placed on the convicted vendor list.

C-37 DISCRIMINATION, DENIAL OR REVOCATION FOR THE RIGHT TO TRANSACT BUSINESS WITH PUBLIC ENTITIES

An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

C-38 CRIMINAL BACKGROUND CHECKS

Criminal History Background Checks (Level 1) shall be obtained for all employees and agents of the Contractor and his subcontractors, their agents and employees, and all other persons performing any of the work under a contract to the Contractor working within buildings or facilities either owned or managed by the Department of Management Services. The Contractor may also be required to perform Criminal History Background Checks for all employees and agents of the Contractor and his subcontractors, their agents and employees, and all other persons performing any of the work under a contract to the Contractor working within buildings or facilities owned or managed by other government entities.

The Contractor is obligated to obtain and pay for each Criminal History Background Report ("Report"), which may be obtained by accessing the Criminal History link on the Florida Department of Law Enforcement online at **http://www.fdle.state.fl.us**

The Contractor must supply FDLE with the employee's complete social security number to allow FDLE to run the Report. However, there is no need for the Department of Management Services to have this number in its entirety. Therefore, prior to sending reports to the Department, and to maintain confidentiality, the Contractor must blacken out all but the last four digits of the individual's social security number.
The Contractor shall forward the Reports to the following e-mail address for confirmation: **redmsecurity@dms.myflorida.com** .

The Department of Management Services will make the determination whether or not to allow entry/occupation of the buildings/facilities. If access is denied to an individual, additional information will be required in order to re-consider the individual for access.

Additional instructions may be found on the Department's forms and documents website shown on the Bidders Instruction page.

C-39 ELECTRONIC MAIL CAPABILITIES

Contractor must have full e-mail capabilities. It is the intention of the Department of Management Services to use electronic communication for all projects whenever possible. Contractor shall provide their e-mail address and the name of a contact person responsible for their electronic communications.

C-40 TERMINATION OR SUSPENSION OF THE AGREEMENT

The provisions of AIA Document Article 14.1 through 14.4 ("Termination or Suspension of the Contract") shall apply.

Also, this Agreement may be unilaterally terminated by Owner for refusal by Contractor to allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received by Contractor in conjunction with this Agreement. In the event of termination due to the fault of others, Contractor shall be paid for services performed to termination date, including reimbursements then due plus terminal expense.

C-41 CLAIMS AND DISPUTES

The provisions of Chapter 28-106, Florida Administrative Code to the extent not inconsistent with this Article are referred-to and adopted by reference and shall govern procedures for claims.

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

Claims by either party must be made within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice. An additional Claim made after the initial Claim has been implemented by Change Order will not be considered unless submitted in a timely manner.

Contractor shall not have any right to compensation other than, or in addition to, that provided by this Agreement, to satisfy any Claim unless Contractor has provided notice as required hereunder. All such Claims shall be set forth in a petition stating:

1. name and business address of the claimant,

2. a concise statement of the ultimate facts, including the statement of all disputed issues of material fact, upon which the Claim is based.

3. a concise statement of the provisions of the Agreement together with any federal, state and local laws, ordinances or code requirements or customary practices and usages in the industry

asserted to be applicable to the questions presented by the Claim and a demand for the specific relief believed to be due the claimant, and

4. the date of the occurrence of the event giving rise to the Claim and the date and manner of Contractor's compliance with the notice requirements this section.

Within thirty (30) calendar days from the date any such Claim is received, Owner shall deliver to Contractor its written determination on the Claim. Unless Owner's determination is agreed to by Contractor and a consent order adopting the determination is entered within thirty (30) days of receipt of Owner's determination, Owner shall designate a hearing officer who shall conduct a proceeding in accordance with Chapter 28-106, F.A.C.

Pending final resolution of a Claim unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Contract and Owner shall continue to make payments in accordance with the Contract Documents.

The venue for all civil and administrative actions against the department shall be in Leon County, unless otherwise agreed by the parties.

Except as otherwise agreed, Contractor and Owner hereby waive all claims against each other for consequential damages arising out of or relating to this Agreement. This mutual waiver includes damages for loss of use, lost profits and overhead expenses. This mutual waiver applies, without limitation, to all consequential damages due to a party's termination in accordance with section C-40 above.

C-42 EXCLUSION OF OWNER FROM LIABILITY

Notwithstanding any other provision of the Contract Documents, should Contractor sustain loss or be damaged by act or omission of a separate contractor, Owner shall not be liable for any such loss or damage and Contractor shall not be entitled to obtain any monetary relief from Owner to compensate for any such loss or damage, but shall be limited to such recovery as is otherwise available at law from persons and/or entities other than Owner. For purposes of this section, "Owner" shall mean any agency, department or branch of the State of Florida.

C-43 MISCELLANEOUS AIA PROVISIONS

The following provisions of the AIA Document shall apply, subject to the other terms of the Agreement:

1. Article 2.3 ("Owner's Right to Stop Work");

2. Article 2.4 ("Owner's Right to Carry Out the Work");

3. Article 6 ("Construction By Owner Or By Separate Contractors");

4. Article 8 ("Time"), modified as follows: (a) replace the words in Article 8.1.3 "...in accordance with Paragraph 9.8." with "...as expressed in the Contract Documents"; (b) delete the words in Article 8.3.1 "or by delay authorized by the Owner pending arbitration."; and (c) delete 8.3.3 in its entirety;

5. Article 10 ("Protection of Persons and Property"), modified by deleting 10.3.3 in its entirety.

6. Article 12 ("Uncovering and Correction of Work");

7. Article 13.1 ("Governing Law"); Article 13.2 (Successors and Assigns"); Article 13.3 ("Notices"); and Article 13.4 ("Rights and Remedies").

C-44 CONFLICTING TERMS; ORDER OF PRIORITY

In the event of conflict among the Contract Documents, the Contract Documents shall be construed according to the following priorities:

Highest Priority:	Modifications
Second Priority:	Agreement
Third Priority:	Addenda-later date to take precedence
Fourth Priority:	Supplementary Terms and Conditions
Fifth Priority:	General Conditions
Sixth Priority:	Drawings and Specifications

If there is a conflict within the Drawings, the figured dimensions shall govern over the scaled dimensions. Detailed Drawings shall govern over the general Drawings. Larger scale Drawings shall take precedence over smaller scale Drawings. Drawings shall govern over Shop Drawings. Whenever there is a conflict concerning quality or quantity between or among notes, specifications, dimensions, details, or schedules in the Specifications or in the Drawings, or between the Specifications and the Drawings, or in all other instances not specifically noted above, Contractor shall provide the better quality or greater quantity of work.

Compliance with these priority conditions shall not justify any changes in the work or any increase in the Contract Sum, unless any such compliance results in work that may not be reasonably inferred from the Contract Documents as being required to produce the intended result as determined by the Architect/Engineer.

C-45 ASSIGNMENT OF ANTITRUST CLAIMS

For and in recognition of good and valuable consideration, receipt of which is hereby acknowledged, Contractor hereby conveys, sells, assigns and transfers to the State of Florida all rights, title and interest in and to all causes to action it may now or hereafter acquire under the antitrust laws of the United States and the State of Florida for price fixing, relating to the particular goods or services purchased or acquired by the State of Florida pursuant to this Agreement.

C-46 EMPLOYMENT OF STATE RESIDENTS AND POSTING OF JOB OPENINGS: Contractor agrees to comply with the requirements set forth in Section 255.099 regarding the employment of state residents and the posting of job openings on the State of Florida job bank system.

C-47 COOPERATION WITH THE INSPECTOR GENERAL: Pursuant to section 20.055(5), Florida Statutes, the bidder who is awarded the contract and its subcontractors understand and will comply with their duty to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing.

EXHIBIT 1
(Sample)

DEPARTMENT OF MANAGEMENT SERVICES
REAL ESTATE DEVELOPMENT AND MANAGEMENT

AGREEMENT BETWEEN OWNER AND CONTRACTOR

STATE PROJECT NO. (Number)

STATE FLAIR CODE: (Accounting Code)

STATE MV DESIGNATION: (Minority Code)

NAME AND LOCATION: (Project Name)
(Project Site)
(Project City)

THIS AGREEMENT made this (Date), is between:

STATE OF FLORIDA, acting through the Department of Management Services, Division of Real Estate Development and Management, hereinafter called **OWNER,** and

(Contractor's Name)
(Incorporated)
(Street Address)
(City, State, Zip)
(Telephone)
Federal Tax I.D. No.: (FEID)

hereinafter called **CONTRACTOR.**

Owner and Contractor agree as follows:

ARTICLE 1. THE CONTRACT DOCUMENTS – This Agreement consists of the General Terms and Conditions and the following documents, drawings, specifications, and addenda (all of which were supplied to Contractor as part of Owner's solicitation of bids for this project):

Supplementary Terms and Conditions dated (Date)

(Drawings defined)

(Specifications defined)

(Addendum Numbers and details)

(Proposal details)

If any of these documents conflict, the priority will be as set forth in Section C-44 of the General Terms and Conditions.

ARTICLE 2. THE WORK – Contractor shall perform all the work required by the Contract Documents for items as specified in the (Base Bid and Alternates (if applicable)

ARTICLE 3. CONTRACT SUM – Owner shall pay Contractor for performing the work, subject to additions and deductions by Change Order as provided in the Contract Documents, in current funds, the Contract Sum of (Contract Amount).

ARTICLE 4. SUBSTANTIAL COMPLETION DAYS; LIQUIDATED DAMAGES. As set forth in the Supplementary Terms and Conditions, this project shall be substantially complete within (number) days after the date of Notice to Proceed. The liquidated damages for delays are (dollars) per day.

ARTICLE 5. This Agreement may be executed in two or more counterparts, each of which together shall be deemed an original, but all of which together shall constitute one and the same instrument. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or ".pdf" signature page were an original thereof, and the transmitting party shall deliver the inked original to the Department, upon the Department's request.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first written above:

(CONTRACTOR'S FIRM) Corporate Seal

By_____
Contractor's Name

AS WITNESSED:

By_____
Corporate Secretary

AS WITNESSED:

By_____
Name and Title

DEPARTMENT OF MANAGEMENT SERVICES

By _____

REVIEWED BY:

By _____
Division of Real Estate Development and Management

APPROVED AS TO FORM AND LEGALITY:

By _____
Office of the General Counsel

EXHIBIT 2
(Sample)

PERFORMANCE BOND

THIS BOND IS ISSUED SIMULTANEOUSLY WITH LABOR AND MATERIAL PAYMENT BOND IN FAVOR OF THE OWNER CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT

KNOW ALL MEN BY THESE PRESENTS: that (Contractor Name and Address)

as Principal, hereinafter called Contractor, and,

(Surety Name and Address)

as Surety, hereinafter called Surety, are held and firmly bound unto the (State Agency's Name)as Obligee, hereinafter called Owner, in the amount of

for the payment whereof Contractor and each individual named Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Contractor has by written agreement, dated_____, entered into a contract with the Owner for_____, Project Number_____in accordance with Drawings and Specifications prepared by_____ which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract and all obligations thereunder, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the surety may promptly remedy the default, in accordance with Section 255.05, Florida Statutes, or shall promptly

1) Complete the Contract in accordance with its terms and conditions, or 2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a Contract between such bidder and Owner, and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract price", as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner. The time within which the Owner can institute an action on this bond against the Surety or Contractor shall be determined by the pertinent Florida Statutes.

EXHIBIT 2 CONTINUED

SIGNED AND SEALED THIS (Date)

(Signature of Witness)	(Signature of Contractor) (Seal)
	(Type Name)
(Signature of Witness)	(Signature of Surety's Attorney-In-Fact) (Seal)
	(Type Name)
(Signature of Witness)	(Signature of Surety's Florida Resident Agent) (Seal)
	(Type Name & Registration Number)

Power of Attorney attached hereto.

NOTES CONCERNING SURETY AND EXECUTION

A. SURETY COMPANY REQUIREMENTS

To be acceptable to the Owner, A Surety Company shall comply with all of the requirements of Article B-12 of the Conditions of the Contract.

B. EXECUTION OF BOND

1. Enter the Surety Company's name and address on each copy of the Bond in the space provided.

2. Enter the date shown on page 1 of the Agreement in the space provided on each copy of the Bond.

3. Enter the date of execution on each copy of the Bond in the space provided. This date must be the same as the date shown on the Agreement.

4. Have each copy of the Bond signed by the same person that signed the Agreement on behalf of the Contractor. Insert that person's name and title in the place provided on each copy of the Bond, and have one other individual witness that person's signature on each copy of the Bond. Also, have the Contractor's Corporate Seal affixed to each copy of the Bond beside that person's signature (No Facsimiles).

5. Have each copy of the Bond signed by the person authorized to sign on behalf of the Surety Company. Insert that person's name in the place provided on each copy of the Bond and have one other individual witness that person's signature on each copy of the Bond. Also, have the Surety Company's Corporate Seal affixed to each copy of the Bond beside that person's signature (No Facsimiles are acceptable).

6. Have each copy of the Bond signed by a Florida Resident Agent (Reference Chapters 624.425 and 624.426 of the Florida Statutes). Insert that person's name and license number in the place provided on each copy of the Bond and have one other individual witness that person's signature on each copy of the Bond. This may be the same person indicated in B.5 above, if this person is a Florida Resident Agent and is also authorized to sign on behalf of the Surety Company as Attorney-In-Fact.

7. Each copy of the Bond must have a Power of Attorney attached indicating that the person in B.5 above is authorized to sign on behalf of the Surety Company.

8. Each copy of the Power of Attorney must have the Surety Company's Corporate Seal and a Notary Seal either manually affixed or they may utilize facsimile reproductions of the same.

9. If the date of execution of the Power of Attorney is not the same as the date shown on the Agreement, then the Power of Attorney must be certified to still be in effect on the date shown on page 1 of the Agreement.

10. If the Bond is being backed by the Small Business Administration, then a certified true and correct copy of the Surety Bond Guarantee Agreement, SBA Form 990, must be attached to each copy of the Bond.

EXHIBIT 3
(Sample)

LABOR AND MATERIAL PAYMENT BOND

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE OWNER CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT

KNOW ALL MEN BY THESE PRESENTS: that (Contractor Name and Address)

as Principal, hereinafter called Contractor, and,

(Surety Name and Address)

as Surety, hereinafter called Surety, are held and firmly bound unto the (State Agency's Name) as Obligee, hereinafter called Owner, for the use and benefit of claimants as herein below defined, in the amount of

for the payment whereof Contractor and each individual named Surety bind themselves, their heirs, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Contractor has by written agreement dated _____, entered into a contract with Owner for _____, Project Number _____in accordance with drawings and Specifications prepared by _____ which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

THE CONDITIONS OF THIS BOND ARE AS FOLLOWS:

1. If Contractor shall promptly make all payments owing when due to all persons who are defined in Section 713.01, Florida Statutes, whose claims derive directly or indirectly from the prosecution of the work provided for in the contract, then this bond is void; otherwise, it remains in full force and effect.

2. Each said claimant shall have a right of action against the Contractor and Surety for the amount due him. No such action shall subject the Obligee to any cost, expense, loss or damage, and Contractor shall promptly pay Obligee for the full measure of all cost, expense, loss, damage, and attorneys fees sustained by Obligee as a result of any default by Contractor under the contract.

3. Pursuant to Section 255.05, Florida Statutes, a claimant, except a laborer, who is not in privity with the Contractor and who has not received payment for his labor, materials, equipment or supplies shall, within forty five (45) days after beginning to furnish labor, materials, equipment or supplies for the prosecution of the work furnish the Contractor with a notice that he intends to look to the bond for protection. A claimant who is not in privity with the Contractor and who has not received payment for his labor, materials, equipment or supplies shall, within ninety (90) days after completing performance of the labor or after completing delivery of the materials, equipment or supplies, deliver to the Contractor and to the Surety written notice of the performance of the labor or delivery of the materials, equipment or supplies and of the nonpayment. No action for the labor, materials, equipment or supplies may be instituted against the Contractor or the Surety after one year from the date performance of the labor is completed or delivery of the materials, equipment or supplies is completed.

4. An action against the Surety or the Contractor or both, may be brought in the county in which the public building or public work is being constructed or repaired or in any other place authorized by the provisions of Chapter 47, Florida Statutes.

5. The amount of this bond shall be changed only to the extent that the Contract Sum is changed in accord with applicable provisions of the Contract for Construction.

6. Neither any change in or under the contract documents, nor any compliance or noncompliance with any formalities provided in the contract or the change shall relieve the Surety of its obligations under this bond.

7. This bond incorporates by reference all the requirements of Section 255.05, Florida Statues, including, but not limited to, all notice and time limitation provisions therein. This bond shall be construed and deemed a statutory bond issued pursuant to Section 255.05, Florida Statutes, and not a common law bond.

EXHIBIT 3 CONTINUED

SIGNED AND SEALED THIS (Date)

(Signature of Witness)	(Signature of Contractor) (Seal)
	(Type Name)
(Signature of Witness)	(Signature of Surety's Attorney-In-Fact) (Seal)
	(Type Name)
(Signature of Witness)	(Signature of Surety's Florida Resident Agent) (Seal)
	(Type Name & Registration Number)

Power of Attorney attached hereto.

NOTES CONCERNING SURETY AND EXECUTION

A. SURETY COMPANY REQUIREMENTS

To be acceptable to the Owner, A Surety Company shall comply with all of the requirements of Article B-12 of the Conditions of the Contract.

B. EXECUTION OF BOND

1. Enter the Surety Company's name and address on each copy of the Bond in the space provided.

2. Enter the date shown on page 1 of the Agreement in the space provided on each copy of the Bond.

3. Enter the date of execution on each copy of the Bond in the space provided. This date must be the same as the date shown on the Agreement.

4. Have each copy of the Bond signed by the same person that signed the Agreement on behalf of the Contractor. Insert that person's name and title in the place provided on each copy of the Bond, and have one other individual witness that person's signature on each copy of the Bond. Also, have the Contractor's Corporate Seal affixed to each copy of the Bond beside that person's signature (No Facsimiles).

5. Have each copy of the Bond signed by the person authorized to sign on behalf of the Surety Company. Insert that person's name in the place provided on each copy of the Bond and have one other individual witness that person's signature on each copy of the Bond. Also, have the Surety Company's Corporate Seal affixed to each copy of the Bond beside that person's signature (No Facsimiles are acceptable).

6. Have each copy of the Bond signed by a Florida Resident Agent (Reference Chapters 624.425 and 624.426 of the Florida Statutes). Insert that person's name and license number in the place provided on each copy of the Bond and have one other individual witness that person's signature on each copy of the Bond. This may be the same person indicated in B.5 above, if this person is a Florida Resident Agent and is also authorized to sign on behalf of the Surety Company as Attorney-In-Fact.

7. Each copy of the Bond must have a Power of Attorney attached indicating that the person in B.5 above is authorized to sign on behalf of the Surety Company.

8. Each copy of the Power of Attorney must have the Surety Company's Corporate Seal and a Notary Seal either manually affixed or they may utilize facsimile reproductions of the same.

9. If the date of execution of the Power of Attorney is not the same as the date shown on the Agreement, then the Power of Attorney must be certified to still be in effect on the date shown on page 1 of the Agreement.

10. If the Bond is being backed by the Small Business Administration, then a certified true and correct copy of the Surety Bond Guarantee Agreement, SBA Form 990, must be attached to each copy of the Bond.

EXHIBIT 4
(Sample)

OWNER'S CERTIFICATE OF PARTIAL PAYMENT

Contractor (Name and Address): _____

Contractor Federal I.D. No: _____

Architect-Engineer Name: _____

Request No: _____

For Period Starting: _____ Ending: _____

State Project No

Project Name: _____

Base Contract Calendar Days:	0
Adjusted Days by Change Order:	0
Revised Contract Days:	0
Elapsed Days to Date:	0
Net Days Remaining:	0
Estimated Days Ahead (+) or Behind (-):	0

Approved Change Orders (Attach additional pages if required)

CO#	$ AMOUNT	CO#	$ AMOUNT
001	$0.00	011	$0.00
002	$0.00	012	$0.00
003	$0.00	013	$0.00
004	$0.00	014	$0.00
005	$0.00	015	$0.00
006	$0.00	016	$0.00
007	$0.00	017	$0.00
008	$0.00	018	$0.00
009	$0.00	019	$0.00
010	$0.00	020	$0.00
Subtotal	**$0.00**	Subtotal	**$0.00**
Total Net Change Orders $	**0.00**		

Original Contract Sum……..	$	0.00
Change Orders (Net)……..….	$	0.00
Contract Sum To Date……..…	$	0.00
Completed To Date……..……	$	0.00
Materials Stored……..……..…	$	0.00
Total Completed & Stored……..……..……	$	0.00
Less Retainage 0 %..	$	0.00
TOTAL……..……..……	$	0.00
Less Previous Certificates……	$	0.00
Less Materials Purchased Directly By Owner…..……..…	$	0.00
Balance To Finish……..……	$	0.00
THIS CERTIFICATE PAY THIS AMOUNT	$	**0.00**

Attached to this Certificate of Partial Payment the separate required Form CM05- "CM's Minority Business Enterprises Monthly Status Report of Partial Payment"

TOTAL PAID THIS CERTIFICATE TO MBE: $0.00

CERTIFICATION BY THE CONTRACTOR: According to the best of my knowledge and belief, I certify that all items and amounts shown on the face of this Application are correct, that all work has been performed and material supplied in full accordance with the terms and conditions of the Contract, and that all materialmen, laborers and subcontractors, as defined in Chapter 713.01, Florida Statutes, have been paid the amounts due them out of any previous payments made to the contractor by the Owner. Further, I agree to promptly pay each materialmen, laborer and subcontractor, as defined in Chapter 713.01, Florida Statutes, upon receipt of payment from the Owner, out of the amount paid to me on, account of such materialmen's laborer's or subcontractor's work, the amount to which said materialmen, laborer and subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to myself on account of such materialmen's, laborer's and subcontractor's work.

CONTRACTOR _____ By: _____

STATE OF _____

COUNTY OF _____ The foregoing instrument was acknowledged before me this _____ (date)

by _____ (name of officer or agent, title of officer or agent) of _____ (name of corporation acknowledging)

a _____ (state or place of incorporation) corporation, on behalf of the corporation. He/she is personally known to me or has produced _____ (type of identification) as identification.

_____ (Signature of person taking acknowledgement)

_____ (Name typed printed or stamped)

_____ (Title or Vendor)

CERTIFICATION BY THE ARCHITECT- ENGINEER: I certify that I have checked and verified this Progress Payment Application; that to the best of my knowledge and belief, the above application is a true statement of the value of the work performed and the materials suitable stored on the site; that all work and materials included in this Certificate have been inspected by me or by my authorized assistants; that all work has been performed and material supplied in full accordance with the terms of this Contract; and I approved for payment the amount noted above.

REVIEWED AND RECOMMENDED FOR PAYMENT:

_____ Date:

Architect-Engineer

APPROVED FOR SERVICES, PERFORMED AS STATED BY:

Per CFO Memorandum No. 01 (2012-2013) dated July 26, 2012, Building Construction is exempt from Contract Summary Form requirements. **CERTIFICATION STATEMENT:** "I _____ certify that I am the Contract Manager and the provided information is true and correct; the goods and services have been satisfactorily received and payment is now due. I understand that the office of the State Chief Financial Officer reserves the right to require additional documentation and/or to conduct periodic post-audits of any agreements."

_____ Date: _____

Owner's Project Manager

DMS Form CM03 Revised 5/2017

Download form: http://dms.myflorida.com/business_operations/real_estate_development_management/building_construction/forms_and_documents

EXHIBIT 5
(*SAMPLE)*

DEPARTMENT OF MANAGEMENT SERVICES
CONTRACTOR'S AFFIDAVIT OF CONTRACT COMPLETION

AGENCY: _____

PROJECT: _____

CONTRACTOR: _____

CONTRACT FOR: _____

CONTRACT DATE: _____ CONTRACT AMOUNT: _____

DATE ISSUED FOR SUBSTANTIAL COMPLETION: _____

DATE ISSUED FOR FINAL COMPLETION: _____

CONTRACTOR'S AFFIDAVIT

I solemnly swear and affirm: That the work under the above named contract and all amendments thereto have been completed in accordance with the requirements of said contract; that all costs incurred for equipment, materials, labor, and services against the project have been paid; that no liens have been attached against the project; that no suits are pending by reason of work on the project under the contract; that all Workmen's Compensation claims are covered by insurance, and that the Contractor shall save, protect, defend, indemnify, and hold the Owners harmless from and against any and all claims which arise as a direct or indirect result of any transaction, event or occurrence related to performance of the work contemplated under said contract.

CONTRACTOR:

_____ (Seal)
(Contractor must sign in the presence of a Notary)

Title: _____

Date: _____

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____,
(date)

by _____, of _____
(name & title of officer or agent) (name of corporation acknowledging)

a _____, corporation, on behalf of the corporation. He/She is personally
(state/place incorporated)

known to me or has produced _____ as identification.
(type of identification)

Notary Signature: _____

Name typed printed or stamped: _____

DMS Form CM07 Revised 5/13

Download form:
http://dms.myflorida.com/business_operations/real_estate_development_management/building_construction/forms_and_documents

EXHIBIT5
CONTINUED

CERTIFICATE OF CONTRACT COMPLETION BY CONTRACTOR

PROJECT NO.: _____

PROJECT TITLE: _____

CONTRACTOR: _____

CONTRACT DATE: DATE OF FINAL COMPLETION:

CERTIFICATE OF ARCHITECT/ENGINEER

I CERTIFY: That the work under the above contract has been satisfactorily completed on the date set forth in accordance with the terms of the contract; that the contractor has submitted his sworn affidavit as evidence that he has paid all labor, material

Architect/Engineer Firm Name | Architect/Engineer Signature | Architect/Engineer Name Printed | Date

TO BE COMPLETED BY ARHITECT/ENGINEER THROUGH

THE SUBSTANTIAL COMPLETION PHASE	**DATE**	**DAYS**	**Liquidated Damages**
1. Notice to Proceed (N.T.P)			
2. Time Specified in Original Contract for Substantial Completion (S.C.)			
3. Extension Granted by Change Orders (Days Between Original Contract S.C. and Final Contract S.C.)			
4. Total Days Allowable to Substantial completion (Add Lines 2 and 3)			
5. Project Substantially Completed as Certified by A/E (Total Days from N.T.P. through Date certified by A/E)			
6. Substantial Completion overrun (Subtract Line 4 from 5 and Enter Overrun. **If line 5 less than 4 enter 0.**)			@$ _____ Per Day=$ _____
THE FINAL COMPLETION PHASE			
1. Time Specified in Contract, Between Substantial & Final Completion			
2. Extensions Granted by Change Orders (Days Between S.C.& Final Completion			
3. Total Days Allowable Between Substantial & Final Completion (Add Lines 1 & 2)			
4. Date Actually Completed and Total Days Between Actual S.C. & Date Certified by A/E as Actually being Finally Completed.			
5. Final Completion Overrun (Subtract Line 3 from 4 and Enter Overrun. **If line 4 less than 3 enter 0.**)			@$ _____ Per Day=$ _____
			TOTAL LIQUIDATED DAMAGES _____

Project Manager | Date

cc: DMS Contracts, Project Manager, Architect/Engineer, Contractor, Client Agency

Download form: http://dms.myflorida.com/business_operations/real_estate_development_management/building_construction/forms_and_documents
DMS Form AE11 Revised 4/07

EXHIBIT 6
(Sample)

DEPARTMENT OF MANAGEMENT SERVICES
Division of Real Estate Development and Management
CONSTRUCTION MANAGER'S STATUS REPORT OF CERTIFIED BUSINESS ENTERPRISE (CBE) SUBCONTRACTORS

Contractor (Company Name, Street Address, City & Zip Code)

DMS Project Number
DMS Project Name

Contract Amount

Provider's Invoice # 0 **Date**

CERTIFIED BUSINESS ENTERPRISE (CBE) SUBCONTRACTORS

Only complete this form if the Primary Vendor is NOT certified by the Office of Supplier Diversity (OSD) AND the Subcontractor is a woman-, veteran- and/or minority-owned business enterprise.
*Include consultants, sub-consultants, surveyors, soils testing companies, blueprint shops, travel agents, etc. who provide services on this project.

*Non-Certified Primary Vendor Name	Primary Vendor FEIN #	Primary Vendor Payment Amount	Primary Vendor Invoice Number	[1]CBE Subcontractor Name (Must be certified by OSD)	CBE FEIN #	[2]CBE Code	Description of Service	CBE Vendor Payment Amount
							TOTALS	

[1]OSD Certification Status: Check certification status using the OSD Certified Businesses Directory at https://osd.dms.myflorida.com/directories or MyFloridaMarketPlace (MFMP) Vendor Information Portal at https://vendor.myfloridamarketplace.com

[2]**CBE Codes: N** - African American, Non-Certified; **H** - African American, Certified; **O** - Hispanic, Non-Certified; **I** - Hispanic, Certified; **J** - Asian American business, Certified **K** - Native American, Certified; **M** - Women Owned, Certified; **W** - Service-Disabled Veteran Business Enterprise, Certified

The State of Florida's Office of Supplier Diversity (OSD) certifies woman-, veteran-, and minority-owned businesses for free.

If a subcontractor is a woman-, veteran-, or minority-owned business that is not certified by the State of Florida, refer them to OSD to learn more about the benefits of this free certification: www.dms.myflorida.com/osd or 850-487-0915.

INCLUDE THIS FORM WITH DMS FORM CM03

SECTION 01 00 05 – GENERAL REQUIREMENTS

PART 1 - GENERAL

RELATED DOCUMENTS

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

SCOPE AND INTENT

The work to be done consists of the furnishing of all labor, materials, equipment, and performance of all work included in this Contract.

PLANS AND SPECIFICATIONS

Drawings are generally diagrammatic in nature and do not show in every detail all devices and incidental materials necessary to accomplish their intent. Therefore, the Contractor shall understand that such devices and incidental materials required shall be furnished at no cost to the Owner.

Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements that govern the work. Products and Execution sections modify and supplement the General section by detailed requirements for the work and shall always govern whenever there appears to be a conflict.

All work called for in the Specifications applicable to this Contract, but not shown on the Plans, or vice versa, shall be of like effect as if shown or mentioned in both. The specifications shall always govern whenever there appears to be a conflict.

SUBSTITUTIONS

If the Contractor wishes consideration of equipment or materials other than that specified, he shall make a submittal to the Engineer not less than 10 days after Notice to Proceed. The Engineer may approve such substitution as an alternate, providing the Contractor has demonstrated to his satisfaction that it is equal or superior to the product specified. See Section 010340 for other requirements for submission of Alternate materials and products.

COORDINATION

All work shall be coordinated with the Engineer and the Owner's Project Manager. At the beginning of each week, the Contractor shall present a schedule to the Project Manager showing what work will be taking place and on what days.

DRAWINGS

The Contractor is responsible for verifying that no conflicts exist at the job site that will prevent the successful completion of work under this section.

DAMAGE

The Contractor shall exercise due care when working in overhead or finished areas, shall take all necessary protective measures, and shall repair all surfaces which are damaged as a result of his work.

The Contractor shall be bound by the requirements of the general specification paragraph for the security and protection of personnel, materials, and equipment on site.

CODES

All work, materials, and equipment provided under this specification shall be in compliance with the applicable sections of the latest editions of the following codes and standards.

a. Occupational Safety and Health Regulations.
b. National Fire Codes.
c. Florida Building Codes.
d. Standards of the National Board of Fire Underwriters.
e. Local Municipal Ordinances.

GUARANTEE/SERVICE

The Contractor shall guarantee all new equipment and work installed under this Division for a period of one (1) year from final acceptance without expense to the Owner.

DELIVERY AND STORAGE

Equipment and materials shall be properly stored and adequately protected and carefully handled to prevent damage before and during installation. Equipment and materials shall be handled, stored, and protected in accordance with the manufacturer's recommendations.

Damaged or defective items, in the opinion of the Engineer, shall be replaced at no cost to the Owner.

INSTRUCTION TO OPERATING PERSONNEL

The Contractor shall furnish without additional expense the services of competent instructors who will give full instruction to the designated personnel in the adjustment, operation and maintenance, including pertinent safety requirements, of the equipment and systems. The instructors shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work-week after the equipment or system has been accepted.

Eight man-hours of instruction shall be furnished.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 00 10 - SUMMARY OF WORK

PART 1 - GENERAL

WORK COVERED BY CONTRACT DOCUMENTS

The work of this Contract comprises the general construction of NKB A-Wing Switchgear Replacement & D-Wing PDU / UPS / Surge Protection Upgrades, Neil Kirkman Building, Department of Highway Safety and Motor Vehicles, HSMV 02425040.

Work to be performed shall be in accordance with drawings and specifications prepared by McGinniss & Fleming Engineering, Inc.

The Contractor shall lay out the work with appropriately qualified personnel from the information shown on the drawings.

RELATED REQUIREMENTS

A. Bidding Conditions

B. Contractual Conditions

CONTRACT WORK

The General Construction base bid shall generally include, but not be limited to the following work:

Perform demolition as shown on contract documents.

Perform new work installation as shown on contract documents.

CONTRACT TIME

See Conditions of Contract.

CONTRACTOR'S USE OF PREMISES

Coordinate use of premises under direction of Engineer and Owner’s Project Manager.

Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on site.

Move any stored Products, under Contractor's control, which interfere with operation of the Owner or any separate Contractor.

Protect all existing site vegetation and improvements not specifically noted to be demolished.

OWNER OCCUPANCY

Contractor shall at all times conduct his operations as to insure the safety of and least inconvenience to the building staff and visitors.

OWNER - FURNISHED EQUIPMENT AND PRODUCTS

None.

RIGHT OF ACCESS

The Contractor agrees that representatives of the Owner and Engineer will have access to the work wherever it is in preparation or progress and that the Contractor will provide facilities for such access.

SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

The Contractor shall be solely responsible for all applicable obligations prescribed as employer obligations under any and all governmental regulations.

PROTECTION OF EXISTING FACILITIES AND GROUNDS

Damage to building walls, floors and finishes which occur as a part of this renovation construction or by accident shall be returned to original condition.

Turf, irrigation systems, shrubbery, etc. shall be protected from any and all damage by construction vehicles or work activities. The Contractor shall be responsible for restoring same to equal or better conditions.

The Contractor's fenced staging and construction areas may or may not include existing trees and shrubs; these shall receive protection. The entire staging and construction area shall be cleaned, patched, pressure washed, painted, graveled or re-sodded as required.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 00 40 - COORDINATION

PART 1 - GENERAL

WORK INCLUDED

Contractor shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills as may be necessary to perform the work in accordance with the Contract Documents.

Contractor shall be solely responsible for all means, methods, techniques, sequences and procedures of construction, and for providing adequate safety precautions and coordinating all portions of the work under the Contract Documents.

Contractor shall be responsible to see that the finished work complies accurately with the Contract Documents.

Contractor shall be responsible for all project coordination.

RELATED REQUIREMENTS

Bidding Conditions and Qualifications

Contractual Conditions

DESCRIPTION

Coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.

Maintain reports and records at job site:

a. Maintain Daily Log of progress of work and other pertinent data. Maintain log accessible to Owner and Engineer.

b. Assemble documentation for handling of any claims or disputes that may arise.

Inspections and Testing:

a. Inspect the work to assure that it is performed in accordance with the requirements of the Contract Documents.

b. Arrange with the Engineer or owner as applicable for special inspections or testing required.

c. Correct work that does not conform to requirements of the Contract Documents.

Coordinate sequence of work to insure proposed completion dates are met.

Construction Schedule:

a. Prepare detailed schedule of Contractor's operations and for all subcontractors on the project.

b. Monitor schedules as work progresses.

c. Identify potential variances between scheduled and probable completion date.

d. Recommend to Engineer any adjustments in schedule to meet required completion date.

e. Observe work to monitor compliance with schedule.

f. Verify that labor and equipment are adequate to meet and maintain the schedule for the work.

g. Verify that product deliveries are adequate to meet and maintain the schedule for the work.

h. Report any non-compliance to Engineer, with recommendations for remedy.

i. Verify that adequate services are provided to comply with requirements for work and climatic conditions.

j. Verify proper maintenance and operation of temporary facilities.

k. Administer traffic and parking controls for construction workers. Construction traffic shall not interfere with surrounding traffic movement.

Coordination of Subcontractors:

a. Coordinate work of all subcontractors and relationship between them.

b. Establish on-site lines of authority and communication. Schedule and conduct progress meetings among Owner and Engineer representatives and subcontractors.

c. Ensure that specified cleaning is done during progress of the work and at completion of contract.

MEETINGS

Attend Owner's progress meetings, hold coordination meetings and pre-installation conferences with personnel and subcontractors to assure coordination of work.

COORDINATION OF SUBMITTALS

Schedule and coordinate submittals specified.

Administer processing of shop drawings, product data, and samples.

Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

COORDINATION OF TRADES

Coordinate with Sub-contractors as required:

a. Provide temporary utilities required in the performance of the work.

b. Provide designated location where the workers may place construction debris for removal by the Contractor.

COORDINATION OF CHANGES

Coordinate requests for changes to assure compatibility of space, of operating elements, and effect on work of other sections.

a. Recommend necessary or desirable changes to Engineer.

b. Review subcontractor's requests for changes and substitutions. Submit recommendations to Engineer.

c. Process Change Orders in accord with General Conditions and Change Order Procedures.

COORDINATION OF SPACE

Coordinate uses of project space and sequence the installation of subcontractor work that is indicated diagrammatically on Drawings. Follow routings shown for equipment and conduits as closely as practicable, with due allowance for available physical space; make runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

INTERPRETATION OF CONTRACT DOCUMENTS

Consult with Engineer to obtain interpretation or clarifications for any portions of the contract documents that are unclear or ambiguous. Transmit all requests for interpretation in writing.

Assist in the answering of any questions which may arise.

Transmit written interpretations to Sub Contractors, Suppliers and others whose work may be affected by the clarification.

Interpretations shall be based on the Engineer’s review of the Contract Documents. In case of conflicting data, assumption shall be made that the item of greater quality, cost, or quantity was bid.

START-UP

Direct the check-out of utilities, operational systems, and equipment.

Assist in initial start-up and testing.

Record dates of the start of the operations of systems and equipment.

Submit to Engineer written notice of the beginning of warranty period for equipment put into service.

COORDINATION OF CONTRACT CLOSEOUT

Substantial Completion:

a. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.

b. Upon determination of Substantial Completion of work or portion thereof, prepare for the Engineer a list of incomplete or unsatisfactory items.

Final Completion:

Upon determination that work is at final completion:

a. Submit written notice to Engineer that the work is ready for final inspection.

b. Secure and transmit to Engineer required closeout submittals.

After Owner occupancy of premises, coordinate access to site by various sections for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

Assemble and coordinate closeout submittals specified.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 03 40 - SUBMITTALS

PART 1 - GENERAL

REQUIREMENTS INCLUDED

Submit Shop Drawings, Product Data and Samples required by Contract Documents.

Submittals may include, but are not limited to the following:

1. Those required in the individual technical specification sections.

RELATED REQUIREMENTS

Definitions and Additional Responsibilities of Parties: General Conditions of the Contract.

Designate in the Construction Schedule, Application for Payments, or in a separate coordinated schedule, the dates for submission of Shop Drawings, Product Data and Samples.

SHOP DRAWINGS

Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, schedule or room numbers shown on Contract Drawings.

Shall be original drawings, prepared by Contractor, Subcontractor, Supplier or Distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details. Duplication of contract Documents for any submittal shall not be acceptable.

PRODUCT DATA

Preparation:

1. Clearly mark each copy to identify pertinent products or models.
2. Show performance characteristics and capacities.
3. Show dimensions and clearances required.
4. Show wiring or piping diagrams and controls.
5. Clearly and expressly indicate deviations from Contract Documents.

Manufacturer's standard 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. Note deviations from Contract Documents.

CONTRACTOR RESPONSIBILITIES

Review Shop Drawings, Product Data and Samples prior to submission. Check and stamp submittal with his approval.

Determine and verify:

1. Field measurements.

2. Field construction criteria.

3. Catalog numbers and similar data.

4. Conformance with specifications.

5. Note deviations from Contract Documents.

Coordinate each submittal with requirements of the work and of the Contract Documents.

Notify the Engineer in writing, at time of submission, of his review and approval of submittal and of any deviations in the submittals from requirements of the Contract Documents.

1. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Engineers review of submittals, unless specific deviations are called to the attention of the Engineer in writing and the Engineer gives written acceptance of specific deviations.

2. Contractor's responsibility for errors and omissions in submittals is not relieved by Engineer's review of submittals.

Begin no fabrication or work which requires submittals until return of submittals with Engineer review.

Submittals not reviewed and approved by the Contractor will be rejected.

SUBMISSION REQUIREMENTS

Make submittals promptly in accordance with accepted schedule, and in such sequence as to cause no delay in the work or in the work of any other Contractor.

Number of submittals required:

1. Shop Drawings: Submit sufficient quantity of copies of shop drawing for the Contractor’s use and two (2) copies to be retained by the Engineer.

2. Product Data: Submit sufficient quantity of Product Data for the Contractor’s use and two (2) copies to be retained by the Engineer.

3. Samples: Submit the number stated in each specification section. Provide two (2) samples if not indicated.

Submittals shall contain:

1. The date of submission and the dates of any previous submissions.

2. The project title and number.

3. Contract identification.

4. The names of Contractor, Supplier and Manufacturer.

5. Identification of the product, with the specification section number.

6. Field dimensions, clearly identified as such.

7. Relation to adjacent or critical features of the work or materials.

8. Identification of revisions on re-submittals.

9. Applicable Standards (such as ASTM or Federal Specification numbers).

10. A 5 inch x 3 inch blank space for Contractor and Engineer or provide review status cover page.

11. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

RE-SUBMISSION REQUIREMENTS

Make any corrections or changes in the submittals required by the Engineer and resubmit until accepted.

Shop drawings and product data:

1. Revise initial drawings of data, and resubmit as specified for the initial submittal.

2. Cloud any change which has been made.

3. Indicate shop drawing is being resubmitted. Use Engineer's shop drawing identification number if provided.

Samples: Submit new samples if requested by Engineer.

DISTRIBUTION

Distribute reproductions of Shop Drawings and copies of Product Data which carry the Engineer stamp of acceptance to:

1. Job site file.

2. Subcontractors.

3. Supplier or Fabricator.

4. Project close-out documents.

ENGINEER DUTIES

Review submittals; allowing Engineer a period of 14 calendar days for review and return of Shop drawings.

Affix stamp and initials or signature and indicate requirements for re-submittal or approval of submittal.

Return submittals to Contractor for distribution or for re-submission.

Forward copy of submittal for Owner's use and information. This shall not relieve Contractor's requirements in other sections to provide the Owner with a complete record copy at job close-out.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Shop Drawing Submittals shall be reviewed in accord with the following:

Review by Engineer of Record of submittals is for general conformance with the design concept as presented by the Contract Documents. No detailed check of quantities or dimensions will be made.

The Contractor is responsible for assuring that all submittals comply with the latest project plans, specifications, governing codes and regulations and is solely responsible for confirming all quantities, dimensions, fabrication techniques and coordinating work with all trades.

Engineer’s approval of shop drawings does not extend to items for which there is no submission. Any materials or equipment installed without submitting data for Engineer’s approval are installed at the Contractor’s risk.

Shop drawings are to be submitted in a timely manner allowing adequate time for processing.

All shop drawings must bear evidence of the Contractor's approval prior to submitting to the Engineer of Record.

All changes and additions made on re-submittals must be clearly flagged and noted. The purpose of the re-submittals must be clearly noted on the letter of transmittal. Engineer of Record review is limited to those items causing the resubmission.

Shop drawings not meeting the above criteria or submitted after fabrication will not be reviewed.

END OF SECTION

SECTION 01 03 70 - SCHEDULE OF VALUES

PART 1 - GENERAL

GENERAL REQUIREMENTS

Submit to the Engineer a Schedule of Values not more than 14 calendar days after Contractor’s Notice to Proceed.

Upon request by Engineer, support values given with data that will substantiate their correctness.

Use only Schedule of Values as basis for Contractor's Application for Payment.

FORM OF SUBMITTAL

Submit Typewritten Schedule of Values on AIA Standard Form (G703). Computer generated formats of this form are acceptable.

Use table of Contents of this specification as a minimum basis for format for listing cost of Work. Additional breakdowns shall be as determined and required by the Engineer and Owner. Work shall be broken into labor and material costs.

Identify each line item with number and title as listed in Table of Contents of this Specification.

PREPARING SCHEDULE OF VALUES

Itemize separate line item cost for each of the following general cost items as applicable.

Performance and Payment Bonds
General Conditions
Basic Materials
A-Wing Switchgear and Transformer Scope
D-Wing PDU / UPS / Surge Protection Scope
Other items as deemed appropriate
Mobilization
De-Mobilization

Itemize separate line cost for work required by each section of this Specification. Quantities should be sufficiently detailed and subdivided as necessary to describe all of the labor and materials incorporated into the work to accurately measure the Contractor's progress for periodic payments.

Round off figures to nearest dollar.

Make sum of total cost of all items listed in each schedule equal in total Contract Sum.

REVIEW AND RESUBMITTAL

After review by Owner and Engineer, revise and resubmit Schedule of Values as required.

Resubmit revised Schedule of Values in the same format.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTIONS

Not used.

END OF SECTION

SECTION 01 07 00 - CONTRACT CLOSEOUT

PART 1 - GENERAL

REQUIREMENTS

Closeout is hereby defined to include general requirement 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. Time of closeout 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.

PREREQUISITES TO SUBSTANTIAL COMPLETION

Prior to requesting 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, show either 100% completion for portion of work claimed as "substantially complete" or list incomplete items, value of incompletion 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. Advise Owner of pending insurance change-over requirements if applicable.

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. 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.

Upon receipt of Contractor's request, Engineer will either proceed with inspection or advise contractor of prerequisites not fulfilled. Following initial inspection, Engineer will 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. Results of completed inspection will form initial "punch-list" for final acceptance.

PREREQUISITES TO FINAL ACCEPTANCE

Prior to requesting Engineer's final inspection 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 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 Engineer.

4. Submit final liquidated damages settlement statement, acceptable to Owner.

5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey and similar final record information.

6. Complete final cleaning up requirements, including touch-up of marred surfaces.

7. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.

8. Electrical:

    a. System tests including Manufacturer’s certifications and NFPA.

    b. Project certification

Upon receipt of Contractor's notice that work has been completed including punch-list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, Engineer will re-inspect work. Upon completion of re-inspection, Engineer will 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 will be repeated.

If re-inspections of above referenced items are required by the Engineer due to the failure of any of the Work to comply with the claims made by the Contractor as to the status of their completeness, the Owner will deduct the costs incurred by such re-inspections from the Contract amount.

RECORD DOCUMENT SUBMITTAL

Specific requirements for record documents are indicated in individual sections of these specifications. Other requirements are indicated in General Conditions. Do not use record documents for construction purposes; protect from deterioration and loss in a secure location; provide access to record documents for Engineer's reference during normal working hours.

At time of final acceptance, submit complete sets of all required record documents to the Engineer for Owner's records.

RECORD DRAWINGS

Maintain a white-print set of contract drawings and shop drawings in clean, undamaged condition with mark-up of actual installations which vary substantially from the work as originally shown. Mark whichever drawings are most capable of showing "field" condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at corresponding location on working drawings. Mark-up new information which is recognized to be of importance to Owner but was for some reason not shown on either contract drawings or shop drawings. Give particular attention to concealed work which would be difficult to measure and record at a later date. Note related change order numbers where applicable.

Upon completion of the Work, this data shall be recorded to scale, by a competent draftsman. A new copy of the contract drawings will be furnished to the Contractor by the Engineer, but cost shall be borne by the Contractor. Where changes are to be recorded, the prints shall be erased in such a way as to properly represent the work as installed. Where the work was installed exactly as shown on the Contract drawings, the prints shall not be disturbed. In showing the changes, the same legend shall be used to identify piping, etc., as was used on the Contract Drawings.

The Contractor shall review the completed record drawings and ascertain that all data furnished on the record drawings are accurate and truly represent the Work as actually installed. Upon completion, the subcontractor involved shall date and sign the drawings, signifying compliance with the requirements set forth herein prior to submission of the prints required.

The Contractor shall sign all pages to certify completeness of the Record Set of Drawings. Contractor shall submit the drawings and two sets of photocopies to the Engineer for the Owner.

Record Specifications:

Maintain one copy of specifications including addenda, change orders 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.

FINAL CLEANING

Special cleaning for specific units of work is specified in other sections. General cleaning during progress or work is specified in General Conditions and as temporary service 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 of cleaning levels required:

1. Remove non-permanent protection and labels which are not required as permanent labels.

2. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.

3. Wipe surfaces of electrical equipment clean; remove excess lubrication and other substance.

4. Clean project site (yard and grounds) 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.

Removal of Protection:

Remove temporary protection devices and facilities which were installed during course of the Work to protect previously completed Work during remainder of construction period.

Compliances:

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.

Where extra materials of value remaining after completion of associated work have become Owner's property, dispose of these to Owner's best advantage as directed.

CLOSEOUT DOCUMENTS CHECKLIST

Follow instructions included in DMS Form AE10.

END OF SECTION

SECTION 26 00 00 ELECTRICAL GENERAL REQUIREMENTS

PART 1 - GENERAL

APPLICATION

The work described hereunder shall be installed subject to the Contractual Conditions for the entire Specifications.

These provisions apply to all sections of Division 26 of this project except as specified otherwise in each individual section. Codes, standards, policies and requirements contained in this Section are applicable to all contract documentation.

CORRELATION

This Section of the Specifications and its accompanying Drawings are made separate for the convenience of the Contractor in preparing his bid and in no way relieves the Contractor of his responsibility to correlate the work under this Section with that of all other trades as regards the items to be furnished by various Subcontractors, the exact location of all equipment and materials and the necessity of planning the work of all trades to avoid interference.

DESCRIPTION OF WORK

Furnish all labor, materials, equipment and incidentals required to complete all electrical work as specified in this Division and as shown on the Contract Drawings. Division 26 work shall include the installation of a complete and properly operating electrical system.

Refer to other Divisions of this specification for electrical requirements of factory installed motors, controllers, power supplies, etc. Electrical connections to equipment furnished as specified in other sections of these Specifications or shown on other than the Electrical Drawings shall be governed by this Division of the Specifications.

The bidder shall inspect the present jobsite conditions before preparing his bid. The submission of a bid will be considered evidence that such a visit and inspection was performed by the bidder and that he takes full responsibility for all factors governing his work.

The electrical work shall be complete, fully operational, and suitable in every way for the service required. Drawings are generally diagrammatic in nature and do not show all details, devices and incidental materials necessary to accomplish their intent. Therefore, it shall be understood that such devices and incidental materials required shall be furnished at no cost to the Owner.

RELATED WORK

Drawings and general provisions of Contract, including General Conditions, Supplementary General Conditions, and Special Conditions sections apply to work specified in Division 26.

The Contractor shall be aware that other divisions of these Specifications may apply to related work required to perform Division 26 requirements. All related work shall be performed in accordance with those divisions.

CONFORMANCE

If the Contractor takes no exceptions to these Specifications in the Submitted Bid, the Contractor will be held totally responsible for failure to comply.

Any exception to the Specification shall reference the affected paragraph(s), subject(s), and list benefit to the Owner.

The Owner reserves the right to have the Contractor replace installed material or equipment which does not comply with these Specifications at the Contractor's expense.

SUBMITTALS

Obtain approval before procurement, fabrication, or delivery of items to the job site. Submit manufacturers' data on the equipment listed below and as directed in other Sections of Division 26. Follow the procedures required in Division 1 of this specification. Data shall be in the form of manufacturer's descriptive data sheets and engineering drawings and will be reviewed by the Engineer before materials and equipment are delivered to the work site. Review of the submittal by the Engineer is to check for general conformance to the design intent and will not relieve the Contractor of the responsibility for the correctness of all dimensions, conformance and the proper fitting of all parts of the work.

Panelboards and Circuit Breakers
Switchgear
PDUs
UPS Components
Surge Protection Devices
Disconnect Switches
Transformers

Submit manufacturers' names and catalog numbers for the following materials:

Conduit, Fittings, and Couplings
Boxes and Fittings
600 Volt Wire and Cables
Grounding Equipment

The Contractor shall thoroughly check the submittal for accuracy and compliance with the contract requirements. Shop drawings and data sheets shall bear the date checked and shall be accompanied by the Contractor's statement that they have been checked for conformity to the Specifications and Drawings. Submittals not so checked and noted will be returned without review.

Deliver the entire electrical submittal to the Engineer complete and in one package. An incomplete submittal will be returned to the Contractor without review.

EQUIPMENT SUBSTITUTIONS

Substitutions that do not increase installation value will not be accepted.

Contractor proposed substitutions may result in necessary changes to the construction documents. Coordination effort due to Contractor proposed substitutions shall be the complete responsibility of the Contractor. All potential conflicts are to be addressed. The Contractor shall also be responsible for any work of any other trades made necessary by the substitution. All potential conflicts with other trades are to be addressed.

The Engineer's review of the proposed substitutions and coordination documents is for the benefit of the Owner and not the Contractor and does not relieve the Contractor of responsibility for making any corrections necessary to insure the Owner receives full benefit of the original design intent.

Detailed coordination documents shall be provided for any equipment that, in the opinion of the Engineer, materially differs from the design documents. This difference includes but is not limited to any equipment having:

- access requirements that differ from the design / specification
- operating characteristics that differ from the design / specification
- footprints or elevations that differ from the design / specification
- connection requirements or locations that differ from the design / specification
- venting or combustion air requirements that differ from the design / specification
- electrical characteristics that differ from the design / specification
- control requirements that differ from the design / specification
- hydronic characteristics that differ from the design / specification
- plumbing requirements that differ from the design / specification

Documentation shall include a detailed listing of all differences from the design / specification. Also included will be a detailed explanation as to why these differences should be considered equal or an improvement.

Any physical differences shall be coordinated with drawings. All Coordination Drawings shall be produced by a competent drafts person and shall be equivalent in quality, detail, and scope to the Construction Drawings.

Acceptance of the substitution as an equal will be the sole descretion of the Engineer. Items of necessary coordination or review omitted from the documentation shall be grounds for rejection of the substitution.

No cost increase to the Owner for any changes due to coordination will be considered. The Engineer shall be compensated for any and all efforts associated with review and coordination of non-conforming equipment

CODES, INSPECTION AND FEES

Comply with the indicated edition of the following codes and ordinances. Where specific edition is not indicated, comply with the latest published edition.

American National Standards Institute - ANSI
- C2 – The National Electrical Safety Code
- ANSI/IEEE C37.90.1 Surge Withstand Capability (Swc) Tests For Relays And Relay Systems Associated With Electric Power Apparatus
- C62.41 - Transient Voltage Surge Suppressors

American Society for Testing and Materials - ASTM

National Fire Protection Association - NFPA
- NFPA 70; The National Electrical Code
- NFPA 101; The Life Safety Code

Florida Building Code
- FBC-B 2023; The Florida Building Code 8th Edition
- FPC 2023; The Florida Fire Prevention Code 8th Edition

Federal Communications Commission - FCC

Insulated Cable Engineers Association - ICEA

Institute of Electrical and Electronic Engineers – IEEE (latest edition)
- 383 Vertical Flame Test
- 587 Transient Voltage Surge Suppressors
- 1547 Interconnecting Distributed Resources with Electric Power Systems
- 1547.1 Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems

National Electrical Manufacturers Association

NEMA ICS 1 – 2000; Industrial Control and Systems General Requirements
NEMA ICS 2 – 2000; Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts
NEMA AB3 - 2013 “Molded Case Circuit Breakers”.
Serving Utility Company Policies
City of Tallahassee Municipal Codes and Requirements
Underwriters Laboratories - UL
467 Electrical Grounding and Bonding Equipment
506 Enclosures 514A Outlet Boxes and Fittings
514C Non-metallic Outlet Boxes and Fittings
1449 Transient Voltage Surge Suppressors

Obtain all permits required. Contractor shall pay all fees for permits and inspections.

COMPLIANCE AND REVIEW

Within two weeks of the awarding of the contract, and before any work is commenced, the Contractor shall meet with all legal authorities having jurisdiction, review all materials and details of this project, and agree on any required revisions. A letter shall be forwarded to the Engineer listing the names, dates and place of such review and the revisions required. A copy of the letter shall also be sent to the reviewing authority.

The Contractor shall also meet with each serving utility and repeat the above procedure. A letter certifying each meeting shall also be written with the information as described above.

TEMPORARY LIGHTING AND POWER

Provide temporary lighting and power during construction. The Contractor may utilize existing building distribution power for temporary and construction power. Temporary power shall be 120/208 volt, single phase.

Temporary wiring shall be done in a safe and neat manner. See Article 590 of the NEC.

Size temporary power conductors so that voltage drop is kept below 5% at maximum designed load at the delivery point.

RECORD DOCUMENTS

Prepare record documents in accordance with Division 1 requirements. Record documents shall be complete and accurate and clearly show deviations to the Contract Drawings. Additionally, indicate major raceway sizes and routings, locations of all control devices, all equipment and locations to scale, and fuse and circuit breaker ratings and arrangements.

Record documents shall reflect the complete contract record, including all changes, supplements and addenda as issued. All drawings, sketches and notations describing the work and as issued by the Engineer shall be incorporated.

Prepare bound sets of equipment Operation and Maintenance Instructions. These instructions shall include the name and location of the system, the name and telephone number of the Contractor, and all subcontractors installing the system or equipment, and the name and telephone number of each local manufacturer’s representative for the system or equipment. Routine maintenance actions shall be clearly identified and include a listing of approved disposable materials necessary.

Furnish bound copies of all test results required in other sections of this division.

GUARANTEES

Equipment: one (1) year from final acceptance by the Owner. Materials and labor: one (1) year from final acceptance by the Owner.

All equipment shall be warranted to be free from defects in workmanship, design and materials. If any part of the equipment should fail during the warranty period, it shall be replaced and the unit(s) restored to service at no expense to the Owner.

In addition to the guarantee of equipment by the manufacturer the Contractor shall also guarantee such equipment for a period of one (1) year from final acceptance by the Owner. The Contractor's one (1) year guarantee shall be for equipment, materials, and labor.

The manufacturer's warranty period shall run concurrently with the Contractor's warranty period. No exception to this provision will be allowed.

Additional guarantee requirements specific to certain parts or assemblies or installations may be in the General and Special Conditions, or other Sections of these Specifications.

PART 2 - PRODUCTS

EQUIPMENT AND MATERIALS

Furnish materials or equipment specified by manufacturers named.

Materials furnished shall be new, undamaged and packed in the original manufacturer's packing.

All equipment and apparatus shall bear the seal of approval of the Underwriter’s Laboratory where testing and listing performance criteria has been established for like items.

Protect equipment and materials from mechanical and water damage during construction. Suitable storage facilities shall be provided. Equipment shall not be stored out-of-doors except as follows:

> Concrete items, plastic conduit if protected from sunlight, rigid metal conduit if protected from water and debris, padmounted equipment for outdoor installation if maintained in a normal weathertight condition, ground rods, and large spools of cables with ends properly sealed. In no case will materials be stored directly on the ground. Provide suitable timbers or billets on which items will be stored out of direct contact with the earth.

All items to be installed shall be free of rust and dirt. Damaged materials and equipment shall be replaced by the Contractor at no cost to the Owner.

All electrical panels, enclosures, raceways, conduit, and boxes shall be fabricated of metal unless indicated otherwise.

EQUIPMENT AND MATERIALS STANDARDS

Design and fabrication of electrical equipment and materials:

> The American National Standards Institute (ANSI)
> The American Society of Mechanical Engineers (ASME)
> The American Society for Testing and Materials (ASTM)
> The Institute of Electrical and Electronic Engineers (IEEE)
> The National Electrical Manufacturers Association (NEMA)
> The Occupational Safety and Health Administration (OSHA)

The Underwriters Laboratories (UL)
The National Fire Protection Association (NFPA)

Comply with the latest edition and revisions of these codes and standards.

EQUIPMENT RATINGS

Horsepower and wattages of equipment shown on the Drawings are estimated and comply with a certain basis of design. It is the Contractor's responsibility to coordinate with, and furnish proper connections to equipment substituted and accepted as equivalent to the basis of design.

Conduit, wire, disconnects, fuses, and circuit breakers shall be sized to suit the horsepower and wattage of equipment actually furnished. However, conduit, boxes, wire or disconnects shall not be sized smaller than shown on the Drawings.

PART 3 - EXECUTION

QUALITY ASSURANCE

Installer's Qualifications: At least three years of successful installation experience on projects with electrical work similar to that required for this project.

Manufacturer's Qualifications: Manufacturers regularly engaged in the manufacture of electrical components and equipment of the types and sizes required, whose products have been in satisfactory use in similar service for not less than five years.

Electrical work shall be performed by experienced persons skilled in the trade.

Work shall be supervised by a licensed journeyman or master electrician who shall be on the job site at all times while work is in progress.

Work shall be done neatly and in keeping with good practice and conventions of the trade. The electrical installation shall be of high quality, and of the performance level associated with top level commercial electrical installations as determined by the Engineer and the National Electrical Code.

IDENTIFICATION

Provide laminated plastic nameplates for each panelboard, automatic transfer switch, safety disconnect, equipment enclosure and all other major pieces of equipment installed or modified as part of this contract.

Furnish all starters, disconnect switches and control panels with engraved name plates identifying the equipment served. Attach nameplates to equipment, aligned with structural features of equipment, with two pressure pins or #4 stainless steel screws, nuts, and lockwashers.

Identification of flush mounted panelboards and other cabinets shall be on the inside of the cabinet only.

Panelboards shall have typewritten directories with all loads thoroughly described for each circuit. Update existing panelboards and their directories to reflect new work.

CLEANING AND PAINTING

Clean all equipment and boxes thoroughly inside and outside at the completion of installation. Do not leave dirt and debris inside panelboard and equipment cabinets, device and junction boxes, etc.

All painting shall be done according to the Finishes Section of these specifications.

Paint all exposed conduit and wiremold installed on painted surfaces to match surrounding surface. Paint exposed threads on conduits and touch up all scratches in galvanized pipe and fittings with a high quality cold galvanizing compound.

Touchup scratched or marred surfaces of lighting fixtures, panelboards, motor control centers, switchboards, etc. with paint furnished by the equipment manufacturer specifically for the purpose.

EXCAVATION, TRENCHING AND BACKFILLING

Perform all excavation and trenching to install raceways indicated on the drawings.

No tunneling shall be allowed unless written permission is received by the Engineer.

Excavated material not suitable for backfill shall be removed from the job site.

Insure that the bottom of trenches are uniform, without large rocks or lumps of dirt which could damage the raceway or conductors.

Backfill with material that will compact readily. Compact backfill material from bottom of excavation up, to within 2” of surrounding undisturbed material.

Cover shall not be less than surrounding grade and no greater than 2" above surrounding grade.

All trenching in and around rooted areas shall be by hand. Contractor shall take all steps necessary to protect existing root growth from damage by trenching or digging. Trenching in proximity to trees and other growth shall be directed radially away from the main trunk so as not to cut across major roots.

All trenching routing shall be coordinated with and approved by the Engineer before digging. Contractor shall contact the Engineer twenty four hours before work is scheduled to begin. Conduit routing shall be clearly laid out with paint or staking before inspection takes place. The Engineer reserves the right to specify final routing before digging begins, or at any point during the operation.

TESTS

Contractor shall test all wiring for shorts and all equipment for proper grounding before energizing. Equipment shall be thoroughly checked and adjusted for proper operation. Check motors for proper rotation before energizing and adjust if necessary.

END OF SECTION

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SECTION 26 05 00 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

SCOPE OF WORK

Furnish all labor, materials and equipment and incidentals required to construct and install the complete electrical systems as indicated on the Drawings and as specified in this Section.

STANDARD OF MATERIALS

All materials, equipment and apparatus covered by this specification shall be new, of current manufacture and shall bear the seal of approval of the Underwriters' Laboratories.

All equipment and materials shall have ratings established by a recognized independent agency or laboratory. The Contractor shall apply the items used on this project within the ratings and subject to any stipulations or exceptions established by the independent agency or laboratory.

All conduits and raceways, wire, devices, panelboards, switches, etc. of a given type shall be the product of one manufacturer.

SUBMITTALS

Manufacturer's data and shop drawings for all components, fixtures, assemblies and accessories indicated in this Division. Submit in accordance with Division 1.

PART 2 - PRODUCTS

HOUSEKEEPING PADS

Housekeeping pads shall be provided for all floor-mounted equipment such as switchgear, motor control centers, transformers, etc. Pads shall be made of concrete extending 3 to 4 inches vertically above finished floor and extending 6 inches horizontally around equipment.

CONDUCTORS

Compliance: Provide wires, cables and connectors that comply with the following standards as applicable:

UL Standard 83	Thermoplastic Insulated Wires and Cables
UL Standard 486A	Wire Connectors and Soldering Lugs for Use with Copper Conductors
UL Standard 854	Service Entrance Cable
NEMA/ICEA WC-5	Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy
NEMA/ICEA WC-8	Ethylene Propylene Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy
IEEE Standard 82	Test procedures for Impulse Voltage Tests on Insulated Conductors

Wire and cable manufactured more than twelve months before delivery to the jobsite shall not be used.

All conductors shall be soft-drawn copper of not less than ninety-eight percent (98%) conductivity, with NEC Type THW, THHN, or THWN for No. 4 and smaller, and Type RHW, THW, or THWN for No. 2 and larger, 600 volt insulation.

Jackets: Factory applied nylon or PVC external jacketed wires and cables for installation in raceways and where indicated.

Color coding of all ungrounded service, feeder, and branch circuits conductors shall be required according to the following convention:

120/208 Volt, 3 phase: black, red, and blue
277/480 Volt, 3 phase: brown, orange, and yellow

Ground wires shall be green and neutrals shall be white or gray or other combination per NEC. Isolated grounding conductors shall be green with yellow stripe or green with applied yellow tape to indicate isolated ground. Ground and grounded wire colors shall be used for these purposes only. Where grounded conductors of different systems are installed in the same raceway, box, auxiliary gutter, or other type of enclosure, each grounded conductor shall be individually identified by system. Additional grounded conductors shall be white with a readily distinguishable colored stripe, other than green, running along the insulation.

Conductors No. 12 AWG through No. 10 AWG shall be solid and No. 8 AWG and larger shall be stranded. No conductors smaller than No. 12 AWG shall be used except as otherwise noted.

Acceptable manufacturers: Anaconda Wire and Cable Co., General Electric Co., Okonite Co., Southwire Co., or Rome Cable Co.

CABLE AND WIRE SPLICES

General: the materials shall be compatible with the conductors, insulations and protective jackets of the respective cables and wires. Use connectors with ampacity and temperature ratings equal to or greater than those of the wires upon which used.

In manholes and other locations where moisture might be present, the splice shall be watertight and submersible.

Connectors: UL 486A. Aluminum and aluminum alloy fittings will not be accepted. Connectors shall be plated with tin or tin alloy.

Conductor Sizes No. 6 AWG and Larger: Splices in conductors shall be made with indenter, crimp connectors and compression tools or with bolted clamp type connectors to insure a satisfactory mechanical and electrical joint.

RECEPTACLES

Receptacles shall be furnished and installed where shown on the drawings and shall conform to the following requirements:

Grounding type duplex receptacle: rated 20 amperes, 125 volt, 2 wire, 3 pole with grounded shunt (yoke permanently grounded to third clip), NEMA Configuration No. 5-20R, and conforming to Federal Specification W-C-596F (submit proof of compliance).

All receptacles listed on the drawings shall be specification grade receptacles. Hospital grade receptacles shall have the UL green dot identification clearly visible on the face. Isolated ground receptacles shall be listed for the intended service and shall be marked with orange dot or have orange face.

Tamper resistant receptacles shall be in compliance with the intent of the NEC. The design of the tamper resistant receptacle shall not incorporate any switching mechanism.

All exterior devices shall be designed for the application and shall be installed in a waterproof enclosure with proper cover.

Acceptable manufacturer: Eagle, GE, Hubbell, Leviton or Pass and Seymour.

SWITCHES

Flush, enclosed type, specification grade, rated at 20 amperes, 120/277 volts, alternating current only, quiet operation, and shall comply with Federal Specification W-S-896F (submit proof of compliance). Switch housing shall be color coded for current rating.

Acceptable manufacturer: Eagle, GE, Hubbell, Leviton or Pass and Seymour.

Motor switches with inherent thermal overload protection shall be Square D, Type F for flush or surface mounting as required by the location of the unit. Units shall be furnished with pilot lights as indicated.

DEVICE PLATES

All plates for switch, receptacles and telephone outlets located on finished walls shall be UL listed with the number of gangs required for the application. Nylon or plastic plates shall match device color. All plates for outlets located on unfinished walls or on condulet type fittings shall be zinc coated sheet metal with rounded or beveled edges.

Weatherproof receptacle covers shall be of impact resistant plastic, gasketed, in-use type. Switch covers shall be gasketed metal.

Device plates shall be factory engraved where indicated on the drawings. Letters shall be black filled.

GROUNDING AND BONDING

Conductors: type THW, THHN/THWN, or RHW to match power supply wiring.

Bonding Jumper Braid: copper braided tape, constructed of 30 gage bare copper wires and properly sized for application.

Flexible Jumper Strap: flexible flat conductor, 48,250 circular mils, with copper bolt hole ends sized for 3/8” diameter bolts.

Grounding Electrodes: solid steel core with a heavy uniform covering of electrolytic copper, 5/8" X 10'. Provide sectional rods if required. Threads, on sectional rods, shall be rolled (not cut) into the composite metal after the copper covering has been applied. Sectional rod couplings shall be of a corrosion resistant alloy.

Plate Electrodes: plate electrodes are not permitted. If sufficiently low resistance cannot be obtained with driven rods, the Architect shall be notified and will provide written instruction on grounding methodology.

NAMEPLATES

Nameplates: 0.125 inch thick laminated plastic; white and black finish; rectangular shaped; minimum of 1.0 X 2.5 inches with 0.25 inch high block style engraved lettering.

PART 3 - EXECUTION

WIRING

All conductors shall be carefully handled to avoid kinks or damage to insulation.

All wires, cables and each conductor of multi-conductor cables shall be uniquely identified at each end by color or with wire and cable markers. Lighting and receptacle wiring shall be distinctly differentiated and junction boxes marked.

Lubrications shall be used, if required, to facilitate wire pulling. Lubricants shall be UL approved for use with the insulation specified.

Neutral wires shall be pigtailed to receptacles so that a receptacle can be removed for replacement without the neutral connection to other receptacles on the circuit being disconnected.

Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torqueing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A.

All 600 Volt wire insulation shall be tested with a "megger" after installation. Tests shall be made at not less than 500 Volts.

DEVICES

Unless indicated otherwise on the drawings all light switches shall be mounted with the centerline of the device 48" above the finished floor.

Unless indicated otherwise on the drawings or in the specifications all receptacles shall be mounted with the centerline of the device 18" above the finished floor.

Receptacles shall be installed with the grounding contact at the top. Where receptacles are required to be mounted horizontally they shall be installed with the neutral contact at the top.

Receptacles above counters shall have major axis horizontal to counter surface and device centerline 6" above counter surface or backsplash (if present).

Mount all devices so that the cover plate edges are in contact with the wall and are parallel to building features.

GROUNDING

Ground all non-current carrying metal parts of the electrical system to provide a low impedance path for ground fault current. Route ground connections and conductors to ground and protective devices in shortest and straightest paths as possible.

Insulated grounding bushings shall be required for all raceways, service entrance panels, distribution panels, all raceways one inch and larger and any raceway entering a concentric knock-out.

In general a ground wire shall be installed in every conduit. The conduit installation itself shall serve as an additional grounding means.

Where there are parallel feeders installed in more than one raceway, each raceway shall have a ground conductor.

Where conduits terminate without mechanical connection (i.e., locknuts and bushings) to panelboards, and for all terminations of conduit sizes one inch and larger; and for all sizes of metallic conduit (rigid or flexible) terminating in concentric knockouts, the following procedure shall be followed: Each conduit shall be provided with an insulated grounding bushing and each bushing connected with a bare copper conductor to the ground bus in the electrical equipment. The ground conductor shall be in accordance with Article 250 of the NEC.

Install ground rods as necessary to provide an earth ground having a test resistance of no more than 25 ohms.

Test ground rods for ground resistance value before any wire is connected. A portable ground testing megger shall be used to test each ground rod or group of rods. The instrument shall be equipped with a meter reading directly in ohms or fractions thereof to indicate the ground value of the electrode tested. Where tests show resistance to ground is over 25 ohms, reduce resistance to 25 ohms, or less, by driving additional ground rods; then retest.

Grounding connections shall be made by exothermal weld or by using a compatible mechanical connector and brazing completely over. Exothermal welds shall be made strictly in accordance with the weld manufacturer's written recommendations. Welds that have puffed up or which show convex surfaces, indicating improper cleaning, are not acceptable. No mechanical connector is required at exothermal welds.

Connect together system neutral, service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, receptacle ground connectors, and plumbing system.

The neutral conductor(s) of the incoming electrical service shall be grounded to the ground rod system, metal cold water piping system, and structural steel using Table 250-66 of the NEC for conductor sizing. Grounding conductors shall be run in rigid non-metallic conduit.

Ground the neutral of all dry type transformers to effectively grounded building steel and metal cold water piping system as near as practicable using Table 250-66 of the NEC to size conductor.

Grounding conductors shall be attached to equipment with a bolt-on lug or approved tapered screw used for no other purpose. Use crimp-on spade lugs for stranded conductors.

IDENTIFICATION

Equipment

Equipment identification shall be made using engraved laminated plastic plates (indented tape labels will not be permitted). Characters shall be white on a black background and 1/4" high minimum. Plates shall be secured to the panels by means of screws or metal pressure pins. Cement, by itself, will not be acceptable. All nameplates shall be mounted on the outside surface of the piece of equipment.

Individually enclosed safety switches, circuit breakers, and motor starters, pull boxes, control cabinets and other such items shall be identified indicating load, electrical characteristics, and source. For example, a disconnect switch for a 7-1/2 horsepower, 208 volt, 3 phase air handling unit, Number 8 feed from Panel "MDP", Circuit Number 2 shall be labeled as follows:

AHU-8
7-1/2 HP, 208V, 3Ø
Cir: MDP-2

Service entrance panel, distribution panels, panelboards, and transformers shall be identified indicating panel designation from the drawings, electrical characteristics and source. For example, a 277/480 volt 3 phase panel "LPA" feed from "MDP" Circuit No. 3 shall be labeled as follows:

LP-A
277/480V, 3Ø
(Feeder: MDP-3)

Service entrance panel and distribution panels shall also have each circuit identified as to circuit number, load, and electrical characteristics of load. For example, a 5 HP, 208 volt, 3 phase hot water pump Number 6 feed from panel MDP, Circuit No. 4 would be labeled as follows with the plate attached adjacent to the circuit:

MDP-4
HWP-6
5 HP, 208V, 3Ø

All enclosures containing energized components shall be marked with mylar labels identifying hazards. Such warning messages as "WARNING-HAZARDOUS VOLTAGE", “480 VOLTS", "240 VOLTS", etc. are acceptable. Labels shall be EZ-Code by Thomas & Betts or similar product.

Junction Box Identification: Each junction box cover shall be labeled with a permanent "magic" marker or other means to identify the circuits within. For example, a junction box containing lighting circuits 21, 23, 25 from Panel L2A would be labeled "L2A-21,23,25". Telephone junction boxes shall be labeled "T". Fire alarm system junction boxes shall be labeled “FA”. Public address, nurse call, and other system junction boxes shall be labeled accordingly.

Conductor Identification: All cables and wires shall be color coded as to phase per convention. See color coding above.

Raceway Identification: All raceways leaving the service entrance panel and distribution panels shall be clearly marked as to their circuit number. For example, a conduit containing conductors for Panel MDP, Circuit No. 5 would be marked MDP-5. Empty conduits shall be marked "empty".

Device Identification: When it is not clear what a wall switch or what a receptacle is dedicated for then the device plate shall be engraved appropriately. Blank plates for future devices shall be engraved "FUTURE". All plates shall be factory-engraved.

Ungrounded Conductor Identification within Panelboards: All panelboards shall have a label indicating the ungrounded conductors color schedule as noted below. Labels shall be at least 2” x 4”, laminated in plastic, and affixed to the inside of the equipment door.

For 120/208 Volt, 3 phase panels:
AØ Conductors – Black
BØ Conductors – Red
CØ Conductors – Blue

For 277/480 Volt, 3 phase panels:
AØ Conductors – Brown
BØ Conductors – Orange
CØ Conductors – Yellow

FIREPROOFING

All conduit and boxes passing through or installed within fire walls and smoke walls shall be installed so as to maintain the integrity and rating of the wall through which it passes. Boxes shall be installed within

1/8" of wall surface. Conduits penetrating rated floors shall be installed to maintain the fire rating of the floor using UL approved sealing materials.

END OF SECTION

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SECTION 26 05 05 ELECTRICAL SELECTIVE DEMOLITION

PART 1 - GENERAL

RELATED DOCUMENTS

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

SUMMARY

This Section includes all labor, material, equipment and services necessary and incidental to complete all the demolition and removal of electrical work as shown on the Drawings or as required.

The demolition drawings do not necessarily indicate all the conditions, details, or work required. The Contractor shall examine the building to determine the actual conditions and extent of the work. Any details not clear to this Contractor shall be referred to the Engineer for clarification prior to bidding.

The Contractor shall be responsible for demolition and removal of all existing electrical systems where shown for demolition. No portion of electrical systems shown for demolition may be abandoned in place.

SUBMITTALS

Shop Drawings: Indicate demolition and removal sequence and location of salvageable items.

Schedules: Submit schedule showing time and detailed sequence of demolition, removal of materials and arranged coordination of anticipated electrical interruptions.

1. Schedule demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.

Project Record Documents: Submit in accordance with Section 16010.

1. Accurately record actual locations of abandoned or dead ended utilities.

QUALITY ASSURANCE

Contractor shall verify the extent of the demolition work. Any questions as to which systems are to be removed versus which systems are to remain shall be referred to the Engineer for clarification prior to commencing demolition work.

The demolition work shall be a phased operation and shall comply with the construction sequence schedule.

Do not close or obstruct egress width of fire exits or access.

Do not disable or disrupt building fire or life safety systems without written permission from the Owner. In all cases, permission shall have been granted not less than ten (10) working days prior to the intended interruption.

PROJECT CONDITIONS

Owner will vacate demolition area prior to start of demolition work.

Owner will continuously occupy areas of building immediately adjacent to selective

demolition areas.

Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations.

Provide minimum of ten (10) working days advanced notice to Owner of demolition activities which will severely impact Owner's normal operations.

Maintain free and safe passage to and from Owner occupied areas.

Condition of Structures: Owner assumes no responsibility for actual condition of areas to be demolished.

Traffic and Passageways: Maintain accessibility for fire fighting apparatus.

1. Conduct demolition operations and debris removal to avoid interference with adjacent occupied facilities.

2. Obtain written permission from authorities having jurisdiction prior to closing or obstructing adjacent occupied facilities.

3. Provide alternate routes when closing or obstructing traffic ways when required by governing authorities.

4. Ensure safe passage of persons around area of demolition. Provide and maintain temporary covered passageways; comply with requirements of governing authorities.

Protection: Perform work in manner to eliminate hazards to persons or property and avoid interference with adjacent areas.

1. Maintain existing utilities that are to remain in service and protect from damage during demolition operations.

2. Do not interrupt existing utilities serving occupied facilities, except when authorized by Owner in writing. Provide temporary services during interruptions.

3. Coordinate in advance with Owner electrical interruptions.

4. Protect existing floors with suitable coverings when necessary.

COORDINATION

The Contractor shall be responsible for coordinating demolition of all affected electrical systems to prevent disruption to the Owner and minimize downtime.

The Contractor shall be responsible for coordinating demolition by other Divisions of the Specifications to prevent disruption to the Owner and minimize downtime.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

EXAMINATION

Beginning alterations to existing building systems means the installer accepts existing conditions.

PREPARATION

Provide, erect, and maintain temporary barriers, warning notifications (signs) and other security devices as may be required for personnel safety.

Inventory each panelboard where circuits are indicated to be reused. Sequentially consolidate existing circuits within each panelboard with regard to area served. Maximize capacity for service to the project area by including existing spares with the group of circuits breakers to be disconnected as a result of this selective demolition. Prepare a current directory, post demolition, for each panelboard as the base upon which the final directories will be compiled.

Temporarily tag every circuit breaker serving systems outside the demolition area. The tag shall be an OSHA compliant, commercially preprinted, 3¼ inch by 5-5/8 inch, accident prevention card with write on matte finish plastic surface, ¼ inch reinforced grommet and attachment string loop. The message on the card front shall read: “DANGER, DO NOT OPEN” and the message on the reverse side shall read: “DANGER, DO NOT REMOVE THIS TAG. NECESSARY DISCIPLINARY ACTION WILL BE TAKEN IF THESE ORDERS ARE DISREGARDED. SEE OTHER SIDE.” The tags shall remain in place until the demolition and renovation are complete.

TEMPORARY CONDITIONS

The Contractor shall include all temporary connections necessary to permit the Owner to occupy areas of the building during the various construction phases.

SALVAGEABLE MATERIAL AND EQUIPMENT

Carefully remove, store and protect the salvage materials and equipment shown on the Drawings for Owner's use. Deliver to location directed by Owner.

Carefully salvage, remove and store, and protect for re-installation the materials and equipment shown on the Drawings.

Materials Retained by Contractor:

1. Items of salvageable value not indicated as Owner salvaged or scheduled for reinstallation may be removed as work progresses.

2. Salvaged items must be removed from site as they are removed. Storage or sale of salvaged items on site will not be permitted.

REMOVAL OF DEMOLITION MATERIAL

Contractor shall remove existing systems, shown or specified, necessary or reasonably inferred, for completion of his/her work. Owner will have the option of retaining any item of material removed under this contract. Item or materials not retained by Owner will become the property of the Contractor, removed from the premises and legally disposed off-site.

Contractor shall dispose of fluorescent lamps, ballasts, and other hazardous materials in accordance with all Local, State and Federal regulations.

Contractor shall remove all wiring determined to be disconnected and abandoned, and remove all conduit and junction boxes determined to be empty and not intended to be used during the reconstruction phase.

Remove abandoned wiring to source of supply.

Remove all exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Remove all junction boxes and conduit supports associated with conduit being removed.

Repair adjacent construction and finishes damaged during demolition and extension work.

Maintain continuity of circuits, which remain in service.

Remove all existing luminaires, switches, receptacles, and other electrical equipment and devices and associated wiring from walls, ceilings floors, and other surfaces scheduled for demolition unless specifically shown as retain or relocate on drawings.

Remove auxiliary and signal systems (IE: fire alarm, security, telephone, data, sound/paging and the like) not scheduled for reuse or relocation. Remove associated devices, appliances and cabling complete.

Remove electrical systems associated with equipment (IE: Elevators, motorized doors/shades/gates/ dampers, mechanical HVAC and plumbing equipment, landscape, civil, kitchen and other equipment served by the electrical systems) not scheduled for reuse or relocation on the drawings. Remove switchboards, motor control centers, panelboards, busway, electrical junctions boxes, pull boxes, conduit, raceway systems (IE: bus gutter, cable tray, plugmold), wiring, safety switches, enclosed circuit breakers, control panels, Energy management systems, relays and contactors associated with equipment scheduled for removal.

PERFORMANCE

Perform drilling, cutting, block-offs, and demolition work required for removal of necessary portions of electrical system. Do not cut joists, beams, girders, trusses, or columns without prior written permission from Engineer.

CLEANING

Broom clean demolition areas of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.

Remove temporary work and protection when no longer needed.

Unless noted otherwise, existing fixtures that are to remain shall be cleaned and lamps and ballasts replaced with new lamps and ballasts.

END OF SECTION

SECTION 26 05 30 - RACEWAY SYSTEMS

PART 1 - GENERAL

SCOPE OF WORK

Furnish all labor, materials and equipment and incidentals required to construct and install the complete electrical systems as indicated on the Drawings and as specified in this Section.

STANDARD OF MATERIALS

All materials, equipment and apparatus covered by this specification shall be new, of current manufacture and shall bear the seal of approval of the Underwriters' Laboratories.

All equipment and materials shall have ratings established by a recognized independent agency or laboratory. The Contractor shall apply the items used on this project within the ratings and subject to any stipulations or exceptions established by the independent agency or laboratory.

All conduits and raceways, wire, devices, panelboards, switches, etc. of a given type shall be the product of one manufacturer.

PART 2 - PRODUCTS

RIGID CONDUIT, TUBING AND FITTINGS

Rigid steel conduit: zinc coated, threaded type conforming to the requirements of UL 6 and ANSI C80.1 standards. Zinc coating shall be applied to both inner and outer surfaces.

Intermediate metal conduit: hot-dipped galvanized, threaded type conforming to the requirements of UL 1242 and ANSI C80.6 standards.

A fitted thread protector shall protect threaded ends from damage during shipment and handling.

Fittings for rigid steel and IMC conduit: zinc coated, threaded type, conforming to Federal Specification W-F-408.

Electrical Metallic Tubing (EMT): UL 797 and ANSI C80.3 standards.

Fittings for electrical metallic tubing: Federal Specification W-F-408. Steel compression or set-screw type, galvanized or cadmium plated, and suitable for location of installation. Conduit bushings shall be metallic with insulated throats. Insulating grounding type bushings shall be provided where required under "Grounding". EMT connectors shall be similar to T&B "Insuline" with completely insulated throats. Field applied insulated throats are not acceptable.

Plastic conduit for direct burial: UL labeled Schedule 40 PVC manufactured to NEMA TC-2 specifications, and UL 651 specifications. Plastic conduit concrete encased may be Type EB.

Plastic interduct for installation in PVC conduits: UL labeled and listed for installation of inside/outside communication cable.

Couplings, fittings, pipe straps and spacers used with rigid plastic conduit shall be fabricated of plastic.

Fittings for plastic conduit: manufactured to NEMA TC-3 specifications.

Acceptable Metal Conduit and Tubing Manufacturers:

EMT:	Allied Tube & Conduit Co. Wheatland Tube Co. Triangle PWC, Inc.
Fittings:	Steel City Thomas & Betts (T&B) Raco Inc.

FLEXIBLE METAL CONDUIT, COUPLINGS AND FITTINGS

Flexible metal conduit for dry interior applications: Federal Specification WW-C-566 and UL 1, continuous, spiral wound galvanized steel type.

Fittings (connectors) for flexible metal conduit: UL E 23018. Squeeze Type of galvanized steel or malleable iron zinc plated.

Flexible metal conduit for damp or exterior applications: liquid tight, UL listed, spiral wound galvanized steel with PVC outer jacket.

Fittings for liquid tight conduit: Federal Specification W-F-406. Provide cadmium plated, malleable iron fittings with compression type steel ferrule and gasket sealing rings and insulated throats.

Acceptable Metal Conduit and Fittings Manufacturers:

FMC:	Alflex Corp. American Flexible Conduit Co. Anaconda Metal Hose, ANAMET Inc.
FMC Fittings:	Steel City Thomas & Betts (T&B) Raco Inc.

CONDUIT MOUNTING EQUIPMENT

Hangers, rods, backplates, beam clamps etc. shall be hot-dipped galvanized iron or steel. They shall be as manufactured by the Appleton Electric Co., Thomas and Betts Co., Unistrut Corp., or approved equal.

JUNCTION BOXES

Sheet Steel Outlet Boxes: conform to UL 514A, “Metallic Outlet Boxes, Electrical”, UL 514B, “Fittings for Conduit and Outlet Boxes, Covers, and Box Supports”, and NEMA OS1, “Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports”.

Sheet Steel: Flat-rolled, code gauge galvanized steel.

Acceptable Manufacturers: Sheet-steel boxes shall be manufactured by RACO, Steel City or equal.

All junction boxes and pull boxes shall be sized per NEC requirements and be of the proper NEMA classification for the locations where they are installed. Where boxes occur above other than lift-out ceilings, access panels must be provided.

Wet location covers shall meet NEC wet location requirements (shall comply with NEC). Covers shall be “in-use” type and shall mount vertically or horizontally and be of gasketed heavy-duty polycarbonate construction with clear cover with lockable hasp for 1/8" shank lock.

OUTLET BOXES

Switch, receptacle and wall or ceiling mounted junction boxes shall be the 4" X 2 1/8" square type. Tile, dry wall, or flat cover plates for one or two devices shall be furnished for each box as required.

OUTDOOR BOXES

Cast Aluminum Boxes: exposed, exterior locations; copper free aluminum, threaded raceway entries, and features and accessories suitable for each location including mounting ears, threaded screw holes for devices, and closure plugs.

Boxes shall have a rear opening in addition to necessary top and bottom openings. Boxes shall be provided complete with a minimum of two closure plugs and self-threading ground screw. Boxes shall have a thermoset, baked enamel silver gray finish. Weatherproof cover plates for one or two devices shall be furnished for each box as required.

Covers shall be of heavy duty die-cast construction. Mounting screws shall be stainless steel. Covers shall have a thermoset, baked enamel silver gray finish and be equipped with a sealing gasket. Covers shall be equipped with a hasp-type locking tab.

Nonmetallic boxes shall be thermoplastic or polyester fiberglass types as manufactured by Carlon or Pass & Seymour.

PART 3 - EXECUTION

RACEWAY INSTALLATION

All interior and above grade exterior wiring shall be installed in a metal conduit and all embedded in concrete or below grade wiring shall be in PVC conduit unless indicated otherwise on the drawings.

Exterior low voltage (less than 50 volts) wiring may be installed in liquid tight, non-metallic flexible conduit (“Sealtite”) where installation is above grade and not subject to damage.

No conduit smaller than 3/4 inch electrical trade size shall be used, nor shall any have more than three 90 degree bends in any one run. Pull boxes shall be provided as required or directed.

No wire shall be pulled until the conduit system is complete in all details.

The ends of all conduits shall be tightly plugged to exclude dust and moisture during construction.

Conduit support shall be spaced at intervals of 8 ft. or less, as required to obtain rigid construction.

Single conduits shall be supported by means of two-hole pipe clamps. Multiple runs of conduits shall be supported on trapeze type hangers with steel horizontal members and threaded hanger rods. The rods shall be not less than 3/8 inch diameter. The channel shall be not less than 1 1/2" nominal size.

Conduit hangers shall be attached to structural steel by means of beam or channel clamps.

All conduits on exposed work shall be run at right angles to and parallel with the surrounding walls and shall conform to the form of the ceiling. No diagonal runs will be allowed. Bends in parallel conduit runs shall be concentric. All conduit shall be run straight and true.

Conduit terminating in sheet steel boxes shall have double locknuts and insulated bushings.

Flexible metal conduit shall be used for all motor terminations and other equipment where vibration is present. Flexible conduit length shall not exceed 1'-6" in length for this application.

Provide expansion coupling every 100 feet for long runs of conduit and at concrete expansion joints. Provide ground bonding jumpers around expansion couplings, used on metallic conduit, sized according to Table 250-122 of the NEC.

Transitions from below grade to above grade shall be with rigid galvanized steel long sweep nineties with a bituminous coating where in contact with earth or concrete. Area of transition shall not be subject to standing puddles of water.

Seal all wall penetrations to watertight condition. Finish as applicable to location.

Steel conduit, when buried in soil, shall be treated with a protective coating of bitumastic or asphalt-base paint, or wrapped with plastic tape.

Approval by the Architect shall be required to install conduit in structural members.

In general, the conduit installation shall follow the layout shown on the plans. This layout is, however, diagrammatic only, and where changes are necessary due to structural conditions, other apparatus or other causes, such changes shall be made without additional cost to the Owner. It is recognized that branch circuit routing shown on the drawings may not always be the most economical or the most feasible method. Routing may be changed by the Contractor subject to the following provisions:

Conduits shown routed overhead may not be installed in or below slabs or in walls.

Not more than three circuits may be installed in any one conduit. Care must be taken to provide the appropriate number of neutrals where two or three circuits are on the same phase.

All conduit shall be concealed unless otherwise noted on the drawings.

Exposed conduit will be permitted only as shown on the drawings. Exposed conduit shall be run parallel with or at right angles to the building walls.

All empty conduits shall be provided with a plastic pull wire rated for a minimum of 200 lbs.

Conduit stub-ups at panels shall be secured in place by use of Unistrut and clamps.

Conduit and tubing shall be kept at least twelve (12) inches from parallel runs of flues, steam pipes or hot water lines.

Where exposed connections to motors and equipment from overhead conduits are made without benefit of a wall for conduit mounting, the connection shall consist of vertical conduit (minimum size 1") from Type "LL", "LR" or “TT” Unilet to floor flange. Connection to equipment shall be with flexible liquid-tight from Type FDT boxes located in the vertical conduit.

Flexible conduit in all areas subject to moisture shall be liquid-tight flexible conduit.

All electrical connections to vibration isolated equipment shall be made with flexible conduit.

All conduit entering the building shall be suitably sealed to prevent the entrance of moisture.

All conduit passing through a structural expansion joint shall be provided with a UL approved expansion joint fitting and bonded as required by the National Electrical Code.

Conduit in hazardous locations (as defined and classified by the National Electrical Code) shall be sealed with sealing fittings. Where hazardous locations exist, all conduit, fittings and installation shall comply with Article 500 of the NEC.

Any wiring in a finished area which cannot be concealed in conduit shall be installed in a surface metal raceway system as manufactured by Wiremold or equal. Utilization of surface metal raceway, if not indicated as such on the plans, will be accomplished only with the written approval of the Architect.

Conduit run in areas with hung ceilings shall be installed in the space above the hung ceiling as close to the structure as possible. Conduits shall be supported from the structure.

Where raceways are indicated installed under slabs, they shall be placed not less than 2” below surface of prepared fill. Under no circumstances shall raceways be laid directly on vapor barrier or in or on reinforcing.

Raceways concealed in ground outside building shall be a minimum of 2 feet below grade and topped with a two inch concrete cap before backfilling. Install plastic warning tape 12 inches above raceway, buried in backfill.

RACEWAY INSTALLATION - CONDITIONS

Conduit raceways shall be installed as indicated herein. Where more than one type of raceway is listed under one condition, the Contractor may exercise his option of the raceway used. Conditions of raceway installation are as follows:

Exposed Raceway Below 8'-0" from Finish Floor and in Areas Subject to Moisture: Rigid galvanized steel conduit.

Raceway Concealed Overhead, or in Walls: Rigid galvanized steel conduit, intermediate metallic conduit or electrical metallic tubing (EMT).

Raceway Concealed in Ground Outside Building: Schedule 40 PVC or rigid steel. Rigid steel conduits installed below slab-on-grade or in the earth shall have a factory-applied PVC coating, two coats of a coal-tar system, or shall be field-wrapped with 0.010 inch thick pipe-wrapping plastic tape applied with a 50-percent overlay.

Final Raceway Connection to Recessed Fixtures in Accessible Locations: Flexible steel conduit maximum of 6'-0" long.

Final Raceway Connection to Pumps, Motors, Transformers, Etc.: Liquid-tight flexible steel conduit maximum of 1'-6" long.

Raceway That Extend Through the Slab or Above Finish Grade: 90° elbows, nipples and couplings of rigid galvanized steel or IMC shall be used where any raceway extends through the slab or above finished grade. In general PVC conduit shall not be allowed above finished slab inside the building or

OUTLET BOXES

Outlet boxes for flush mounted lighting fixtures shall be accessible. If lighting fixture is in a non-accessible ceiling the box shall be accessible when the fixture is removed.

Set boxes plumb and such that their device mounting plane is within 1/8" of the finished wall.

Surface mounted boxes and wiremold boxes, both new or existing, shall be painted to match surrounding surfaces.

The location of boxes on the electrical plans is approximate. Review architectural drawings for specific location or if not shown center and align within architectural detail. The Engineer shall reserve the right to move boxes during rough in.

END OF SECTION

SECTION 26 27 13 SERVICE AND DISTRIBUTION

PART 1 - GENERAL

SCOPE OF WORK

Furnish all labor, materials and equipment and incidentals required to construct and install the complete electrical systems as indicated on the Drawings and as specified in this Section.

STANDARD OF MATERIALS

All materials, equipment and apparatus covered by this specification shall be new, of current manufacture and shall bear the seal of approval of the Underwriters' Laboratories.

All equipment and materials shall have ratings established by a recognized independent agency or laboratory. The Contractor shall apply the items used on this project within the ratings and subject to any stipulations or exceptions established by the independent agency or laboratory.

All conduits and raceways, wire, devices, panelboards, switches, etc. of a given type shall be the product of one manufacturer.

PART 2 - PRODUCTS

PANELBOARDS

Compliance: NFPA 70 National Electrical Code, UL 67, “Electric Panelboards”, NEMA Publication PB1, “Panelboards”, Federal W-P-115a Type 1, Class 1 specifications and NEMA PB 1.1, “Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less”.

Provide factory assembled panelboards in sizes and rating as indicated. Panelboards shall be UL listed and labeled.

Acceptable manufacturers: panelboards shown on the drawings shall be manufactured by Cutler-Hammer, Eaton, Square D, or Siemens.

Provide dead front safety type power distribution panelboards as indicated, with panelboard switching and protective devices in quantities, ratings, types, and with arrangement shown; with anti-turn solderless pressure type main lug connectors approved for use with copper conductors. Select unit with feeders connecting at the top of the panel. Equip with copper bus bars with not less than 98 percent conductivity, and with full size neutral bus; provide suitable lugs on neutral bus for outgoing feeders requiring neutral connections. Provide molded case main and branch circuit breaker types for each circuit, with toggle handles that indicate when tripped. Where multiple pole breakers are indicated, provide with common trip so overload on any pole will trip all poles simultaneously. Provide panelboards with bare uninsulated grounding bars suitable for bolting to enclosures. Select enclosures which are fabricated by same manufacturer as panelboards, which mate and match properly with panelboards.

Provide dead front safety type lighting and appliance panelboards as indicated, with panelboard switching and protective devices in quantities, ratings, types, and with arrangement shown; with anti-turn solderless pressure type main lug connectors approved for use with copper conductors.

Refer to the drawings to determine each panelboards pertinent characteristics such as bus rating, main circuit breaker or lugs only, voltage rating, number of phases, number of positions required, etc.

Select unit with feeders connecting at the top of the panel. Equip with copper bus bars with not less than 98 percent conductivity, and with full size neutral bus; provide suitable lugs on neutral bus for outgoing feeders requiring neutral connections.

Interrupting ratings shall be coordinated with the available short circuit current. Provide molded case main and branch circuit breaker types for each circuit, with toggle handles that indicate when tripped. Where multiple pole breakers are indicated, provide with common trip so overload on any pole will trip all poles simultaneously.

All panels shall be provided with an equipment grounding bus similar to, but isolated from the solid-neutral bus. Provide panelboards with bare uninsulated grounding bars suitable for bolting to enclosures.

Panels shall be carefully aligned and rigidly secured in place with the top of the cabinets located 78 inches above the finished floor.

Each panel shall be furnished with an identification plate as specified in the "Equipment Identification" section of this specification.

Distribution panels which are flush mounted must have door on front of panel.

Circuit Breakers:

Panelboards shall be equipped with thermal-magnetic molded case circuit breakers with trip ratings as shown on the drawings.

Circuit breakers shall be quick-make and quick-break units with positive trip indicating mechanism and common trip on all multi-pole breakers.

Single pole 15 and 20 amp circuit breakers shall be UL listed as "Switching Breakers" and be marked SWD.

Circuit breakers shall be the bolt-on type.

Bus Assembly:

Bus bar connections to the branch circuit breakers shall be the "phase sequence" type.

Bus bars shall be of copper construction. All current carrying parts of the bus shall be plated.

Buses shall be full length with constant cross sectional area, designed for the bus current indicated.

Cable lugs shall be furnished in the quantity and size required for the size and number of conductors indicated.

Mains ratings: as shown on the drawings.

Short circuit current rating: as shown on the drawings. Panelboards, as a complete unit, shall have a short circuit current rating equal to or greater than that indicated. It shall be understood that the minimum rating for 240 and 480 volt rated panelboards shall be 10,000 and 14,000 RMS symmetrical amperes respectively.

Cabinet construction:

Panel enclosures: UL 50. Enclosures shall be furnished without knockouts. All knockouts shall be field cut.

The panelboard bus assembly shall be enclosed in a dead front safety constructed steel cabinet.

The size of the wiring gutters and gauge of steel shall be in accordance with NEMA and UL standards; except that the thickness of steel shall not be less than 16 gauge.

The box shall be fabricated from galvanized steel. Boxes intended for outdoor duty, or where indicated, shall be rated NEMA 3R.

Select enclosures which are fabricated by same manufacturer as panelboards, which mate and match properly with panelboards.

Construction shall be such that circuit breaker mounting hardware is not required when circuit breakers are added in the future.

The panelboard front cover shall be hinged 1-piece with integral door. The integral door shall have completely concealed hinges and door swings, flush lock and key mechanism, and steel door pull.

A circuit directory frame and card with a clear plastic covering shall be provided on the inside of the door. Typed directory cards shall be furnished in each panel.

All panelboards throughout project shall be keyed alike.

Special Provisions:

Where lighting and appliance panelboards are flush mounted, provide spare conduits stubbed up and capped as specified elsewhere in this section. Where surge protection is required, provide as specified in this section - SURGE PROTECTION DEVICES (SPD). Surge protection device system shall be incorporated into the panelboard assembly as described in SURGE PROTECTION DEVICES (SPD).

CIRCUIT BREAKERS INSTALLED IN EXISTING PANELS

Circuit breakers installed in existing panels shall have an A.I.C. rating equal to that of the panel in which they are installed.

SAFETY DISCONNECT SWITCHES

Compliance: NFPA 70 National Electrical Code, UL 98, “Enclosed and Dead Front Switches”, NEMA Publication KS1, “Enclosed Switches”, and NEMA KS 250, “Enclosures for Electrical Equipment (1000 Volts Maximum)”.

Safety switches shall be provided for all motors and equipment indicated or required by the National Electrical Code.

Safety switches shall be Type "HD" (heavy duty) unless noted otherwise, fused or non-fusible as indicated with number of poles as shown or required. Safety switches for equipment may be non-fused only if equipment is UL tested with circuit breaker protection.

Fuses: general use, dual element time-delay, current limiting. Manufactured by Bussman, Littlefuse, Edison, or equivalent.

Safety switches for indoor general purpose application shall be NEMA 1 and for exterior application shall be NEMA 3R.

Acceptable manufacturer: provide safety switches manufactured by Cutler-Hammer, Square D, or Siemens.

Construction: Gray baked enamel finish. NEMA 3R enclosures shall be manufactured from galvanized steel. NEMA 4X enclosures shall be manufactured from 304 stainless steel. Corners shall be ground smooth and polished to overall finish quality. NEMA 4X enclosures shall be fitted with a condensate drain at the bottom and a vent at the top that is rated for NEMA 4X service.

Ratings: Fusible disconnects shall be 240 or 600 volt rated depending on the service voltage.

Fusible disconnects shall be furnished with Class R fuses of the indicated ampere rating (up to 600 amps) and be equipped with rejection clips.

Fusible disconnects shall be UL listed for 200,000 RMS symmetrical ampere short circuit current when equipped with Class R or Class L fuses.

Lugs shall be front removable and be UL listed for aluminum or copper conductors at 60 degrees C or 75 degrees C.

Disconnect switches shall be horsepower rated.

SURGE PROTECTION DEVICES

The SPD shall be Listed in accordance with UL 1449, Fourth Edition. The product and ratings shall be included in the database of the UL.com website.

The surge protective device (SPD) shall be designated a location Type 1 or Type 2 device intended for installation on the load side of the service equipment overcurrent device, including SPDs located at the branch panel.

The SPD shall be connected in parallel with the facility's electrical system.

The SPD shall be made up of metal oxide varistors (MOV's), or a combination of MOV's with selenium cells or silicon avalanche diodes, ensuring that all of the performance requirements are met. Gas tubes shall not be used.

The entire SPD shall be enclosed in a metal or ABS enclosure, NEMA rated for the location. SPDs at main service equipment shall be mounted outside the switchboard or panelboard, not integral to, or installed within the switchboard or panelboard. SPDs for branch panelboard (2nd tier) locations may be mounted outside of, or integral to, the branch panelboard. SPDs installed internal to the distribution equipment shall be of the same manufacturer as the equipment.

The SPD shall have a maximum continuous operating voltage (MCOV) rating not less than 115% of nominal voltage of the system it is protecting.

Protection Modes:

The SPD shall have line to neutral (L-N), line to ground (L-G), line to line (L-L) and neutral to ground (N-G) protection modes for three-phase grounded wye configured systems. For a three-phase delta configured system, the device shall have line to line (L-L) and line to ground (L-G) protection modes.

Voltage Protection Rating (VPR):

The UL 1449 Voltage Protection Rating (VPR) for the device shall not exceed the following:

208Y/120 volt applications:	800V L-N, L-G, N-G; 1200V L-L
480Y/277 volt applications:	1200V L-N, L-G, N-G; 2000V L-L

Nominal Discharge Current (In):

The UL 1449 Nominal Discharge Current Rating (In) shall not be less than the following:

20kA for service entrance, switchboard, and main distribution panel locations
10kA for branch panelboard (2nd tier) locations

Short Circuit Current Rating (SCCR):

The SPD shall have a UL 1449 Short Circuit Current Rating (SCCR) of not less than 200kA.

Surge Current Rating:

The single-pulse (8 X 20 microsecond waveform as specified in ANSI/IEEE Standard C62.41) surge current capacity shall not be less than the following:

100kA per mode (200kA per phase) for service entrance, switchboard, and main distribution panel locations
50kA per mode (100kA per phase) for branch panelboard (2^{nd} tier) locations

Each SPD shall include externally-mounted LED visual status indicators that indicate the on-line status of the unit, for each phase.

At service entrance, switchboard, and main distribution panel locations each SPD shall include the following features:

- audible diagnostic monitoring by way of an audible alarm function
- one set of NO/NC dry contracts for alarm conditions

The manufacturer shall provide a minimum 5 year warranty from the date of shipment of the SPD.

PART 3 - EXECUTION

PANELBOARDS

Mount panelboards such that top most circuit breaker handles shall not be more than 6'-6" above finished floor.

Where panelboards are to be installed on masonry unit walls, including poured reinforced concrete or brick veneer type, install two vertical sections of galvanized steel channel between enclosure and mounting surface. Channel shall be lagged to wall in three places (each length) and the enclosure bolted to the secured channel using stainless steel or galvanized steel hardware. Galvanized channel shall run the entire length of the enclosure, but shall not be exposed at either the top or bottom of the enclosure.

Only one conductor shall be allowed under each terminal of circuit breakers. No splices are permitted in panelboards. Tighten connectors and terminals in accordance with equipment manufacturer’s published torque tightening values for equipment connectors.

Complete and install a typewritten directory for each panelboard that accurately indicates all loads being served by each breaker.

SURGE PROTECTION DEVICES

Install SPD units in accordance with manufacturer's written instructions, applicable requirements of NEC and NEMA standards, and recognized industry practices.

The SPD units shall be installed at the locations shown on the drawings, or as indicated in the one-line diagram. They shall be parallel-connected to, and located adjacent to the switchboard or panelboard being protected. Locate as close as practical to the bus, keeping lead length as short as possible (less than 3 feet preferred to ensure optimum performance).

SPDs shall be connected through a multi-pole circuit breaker or fused disconnect switch, not into main lugs. Circuit breaker or fused disconnect switch shall be 60A for main service device, 30A for branch panelboard device or as recommended by the manufacturer.

Use schedule 40 PVC conduit or metallic conduit between the SPD and the switchboard or panelboard as recommended by the manufacturer. Avoid sharp bends, excess length, and splices in the wires. Where possible, use a close-nippled connection with wires going directly to a circuit breaker within the switchboard or panelboard.

Setup and test per the manufacturer's recommendations.

END OF SECTION

SECTION 26 05 13 - MEDIUM VOLTAGE CABLES

PART 1 - GENERAL

SCOPE OF WORK

Furnish, install and test all medium voltage cable and appurtenances as shown on the Drawings and as hereinafter specified.

APPLICATIONS

Color coding of all ungrounded service conductors shall be required according to the following convention. Colored tape at all exposed portions of cable is permitted in lieu of colored cable. Tape shall cover a minimum of 5” of cable.

"A" Phase: BROWN

"B" Phase: ORANGE

"C" Phase: YELLOW

Grounding conductors shall be Green. Green shall be used for this purposes only.

MINIMUM SIZES

No cable smaller than No. 2 AWG shall be used.

The contractor shall have a certified full time cable splicer on staff that has a minimum of three (3) years experience in cable splicing on medium voltage systems and cable types equivalent to those in the current bid project. This individual shall perform all cable splicing and terminations in the project.

All cable splices will be be witnessed by the agency’s representative. Arrange work and coordinate with these parties.

A resume shall be submitted that includes the cable splicer’s qualifications, a list of projects where he performed such cable splices, the types of cable employed, and the system voltage. All documentation shall be submitted with bid.

All testing such as VLF, phase and rotation testing shall be performed before the circuits are energized. Along with testing results, submit calibration certificates for testing equipment used.

PART 2 - PRODUCTS

MATERIALS

Provide single conductor cable rated MV-105 for the voltage indicated on the Drawings. Cables shall be rated for 133 per cent insulation level. Unless indicated otherwise on the drawings, the insulation system shall be extruded ethylene propylene rubber. Insulation shall be ethylene propylene rubber containing no polyethylene, and the base polymer shall not exceed 72 per cent ethylene by weight. The extruded EPR conductor screen, insulation, and insulation shield shall strictly conform to AEIC CS-87. The shield shall be a helically applied 5 mil bare copper tape. An overall jacket of polyvinylchloride shall be provided. The shield and jacket shall be in strict accordance with ICEA S-68-516 and NEMA WC8.

Wires shall be of annealed, 98% conductivity, soft drawn copper.

All conductors shall be stranded, unless indicated otherwise on the Drawings or in these Specifications.

Other parts of the cable system such as joints and terminations shall have ratings not less than the rating of the cables on which they are installed. Separable insulated connectors, when used, shall have nominal voltage ratings coordinated to associated apparatus ratings rather than cable ratings when used to connect cable to apparatus.

Cable Joints: Shields shall be applied as required to continue the shielding system through each entire cable joint. Shields may be integrally molded parts of preformed joints. Shields shall be grounded at each joint.

Types: Separable insulated connectors of suitable construction or standard splice kits shall be used. Splice kits may be of the heat-shrinkable type or the premolded splice and connector type.

Requirements: Cable joints shall provide insulation and jacket equivalent to that of the associated cable. Armored cable joints shall be enclosed in compound-filled, alloy, splice boxes equipped with stuffing boxes and armor clamps of a suitable type and size for the cable being installed.

EXTERIOR TERMINATIONS

Terminations shall be of the molded elastomer, wet-process porcelain, prestretched elastomer, heat-shrinkable elastomer, or taped type. Acceptable elastomers are track-resistant silicone rubber or track-resistant ethylene propylene compounds, such as ethylene propylene rubber or ethylene propylene diene monomer. Terminations shall be of the outdoor type. Terminations shall be provided with mounting brackets suitable for the intended installation and with grounding provisions for the cable shielding, metallic sheath, and armor.

Factory Preformed Type: Molded elastomer, wet-process porcelain, prestretched, and heat-shrinkable terminations shall utilize factory preformed components to the maximum extent practicable rather than tape build-up. Terminations shall have basic impulse levels as required for the system voltage level.

Taped Terminations: Taped terminations shall use standard termination kits providing suitable terminal connectors, field-fabricated stress cones, and rain hoods. Terminations shall be not less than the kit manufacturer's recommendations.

ACCEPTABLE MANUFACTURER

Provide cable manufactured by General Electric Co., Okonite Co., Pirelli, Rome Cable Corporation, Southwire, or equal.

PART 3 - EXECUTION

INSTALLATION

All conductors shall be carefully handled to avoid kinks or damage to insulation.

All cables shall be uniquely identified at each end by color and also with cable markers. See plans for cable marker detail.

TESTS

Refer to drawings for VLF testing requirements for all new cable installed. Testing shall be in accordance with manufacturer's recommended data and NETA standards. A certified test report with results shall be submitted to the Engineer and the Owner.

END OF SECTION

This page intentionally blank.

SECTION 26 12 19 - TRANSFORMERS – PAD-MOUNTED

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General Conditions and Supplementary General Conditions sections apply to work specified in Division 16.

DESCRIPTION OF WORK

Furnish and install the Pad Mounted Transformers at the locations indicated on the drawings and specified in this section.

STANDARDS

All characteristics, definitions, and terminology, except as specifically covered in this specification, shall be in accordance with the latest revision of the following ANSI®, IEEE®, NEMA®, and Department of Energy standards.

IEEE Std C57.12.00™- Standard for Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers.

IEEE Std C57.12.28™- Pad-Mounted Equipment - Enclosure Integrity.

IEEE Std C57.12.34™- Standard Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers (2500 kVA and Smaller) - High Voltage: 34500GrdY/19920 Volts and Below; Low-Voltage: 480 Volt 2500 kVA and Smaller *(issued in March 2005 - combines IEEE Std C57.12.22 and IEEE Std C57.12.26 standards).*

IEEE Std C57.12.90™- Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers and IEEE Guide for Short-Circuit Testing of Distribution and Power Transformers.

IEEE Std C57.12.91™- Guide for Loading Mineral-Oil-Immersed Transformers.

NEMA TR 1 – Transformers, Regulators and Reactors, Table 0-2 Audible Sound Levels for Liquid-Immersed Power Transformers.

NEMA 260 – Safety Labels for Pad-Mounted Switchgear and Transformers Sited in Public Areas.

10 CFR Part 431 – Department of Energy – Energy Conservation Program: Energy Conservation Standards for Distribution Transformers; Final Rule.

PART 2 - PRODUCTS

RATINGS

KVA	1500	
Phase	3	
Frequency	60 Hz	
Primary Voltage	12,470 Delta	95 KV BIL

Taps	2 - 2 1/2% Below and 2 - 2 1/2% Above Center
Secondary Voltage	480 Wye
Impedance	Manufacture's Standard
Temperature Rise	65 degrees above a 30 degree average ambient with a maximum ambient not to exceed 40 degrees Celsius.

The tolerance on the impedance shall be +/- 7.5% of nominal value for impedance values greater than 2.5%. The tolerance on the impedance shall be +/- 10.0% for impedance values less than or equal to 2.5%.

CONSTRUCTION

The core and coil shall be vacuum processed to ensure maximum penetration of insulating fluid into the coil insulation system. While under vacuum, the windings will be energized to heat the coils and drive out moisture, and the transformer will be filled with preheated filtered degassed insulating fluid. The core shall be manufactured from burr-free, grain-oriented silicon steel and shall be precisely stacked to eliminate gaps in the corner joints OR low-loss amorphous metal OR optimal core material based upon specified loading and/or evaluation formula. The coil shall be insulated with B-stage, epoxy coated, diamond pattern, insulating paper, which shall be thermally cured under pressure to ensure proper bonding of conductor and paper. Coils shall be either aluminum or copper.

The dielectric coolant shall be listed less-flammable fluid meeting the requirements of National Electrical Code Section 450 and the requirements of the National Electrical Safety Code (IEEE Std C2™), Section 15. The dielectric coolant shall be non-toxic, non-bioaccumulating and be readily and completely biodegradable per EPA OPPTS 835.3100. The base fluid shall be 100% derived from edible seed oils and food grade performance enhancing additives. The fluid shall not require genetically altered seeds for its base oil. The fluid shall result in zero mortality when tested on trout fry *. The fluid shall be certified to comply with the US EPA Environmental Technology Verification (ETV) requirements, and tested for compatibility with transformer components. The fluid shall be Factory Mutual Approved®, UL® Classified Dielectric Medium (UL-EOUV) and UL® Classified Transformer Fluid (UL-EOVK), Envirotemp™ FR3™ fluid.

TANK AND CABINET ENCLOSURE

The high-voltage and low-voltage compartments, separated by a metal barrier, shall be located side-by-side on one side of the transformer tank. When viewed from the front, the low-voltage compartment shall be on the right. Each compartment shall have a door that is constructed so as to provide access to the high-voltage compartment only after the door to the low-voltage compartment has been opened. There shall be one or more additional fastening devices that must be removed before the high-voltage door can be opened. Where the low-voltage compartment door is of a flat panel design, the compartment door shall have three-point latching with a handle provided for a locking device. Hinge pins and associated barrels shall be constructed of corrosion-resistant material, passivated ANSI® Type 304 or the equivalent.

A recessed, captive, penta-head or hex-head bolt that meets the dimensions per IEEE Std C57.12.28™-2014 standard shall secure all access doors.

The tank base must be designed to allow skidding or rolling in any direction. Lifting provisions shall consist of four lifting lugs welded to the tank.

The tank shall be constructed to withstand 7 psi without permanent deformation, and 15 psi without rupture. The tank shall include a 15 psig pressure relief valve with a flow rate of minimum 35 SCFM.

The exterior of the unit shall be painted Munsell 7GY3.29/1.5 green (STD), ANSI® 70 gray, or ANSI® 61 gray in color. If a special paint color is specified, a federal spec number or paint chip must be provided at the time of order. The cabinet interior and front plate shall be painted gray for ease of viewing the inside compartment.

The tank shall be complete with an anodized aluminum laser engraved nameplate. This nameplate shall meet Nameplate B per IEEE Std C57.12.00™-2010 standard.

HIGH VOLTAGE BUSHINGS AND TERMINALS

Refer to note on drawings for HV bushing height requirement for base bid scope.

High voltage bushings will be installed in the high voltage termination compartment located on the front left of the transformer and requiring access via the low voltage termination compartment on the front right.

Bushing Style: The high voltage bushings shall be 15 kV 200A bushing wells with bushing well inserts installed. The bushings shall be externally removable and be supplied with a removable stud (Re: Catalog Data CA800016EN, 500-12, and 500-26).

Bushing Configuration: The transformer shall be provided with three (3) high voltage bushings in accordance with Figure 1 dimensions from IEEE Std C57.12.34™-2009 standard for radial feed configurations. The bushing heights shall be in accordance with IEEE Std C57.12.34™-2009 standard, but shall not exceed height of existing bushings such that existing cables can be reused. See drawings for dimensions.

LOW VOLTAGE BUSHINGS AND TERMINALS

Bushing Style: The transformer shall be provided with tin-plated spade-type bushings for vertical takeoff. The spacing of the connection holes shall be 1.75” on center, per IEEE Std C57.12.34™-2009 standard Figure 13a. The quantity of connection holes shall be 12 holes. Transformers 500 kVA with 208Y/120 secondary will have one-piece bushings.

Bushing supports shall be provided for transformers requiring 10 or more connection holes. Bushing supports shall be affixed to the cabinet sidewalls; tank-mounted supports mountings are not acceptable.

Bushing Configuration: The transformer shall be provided with bushings in a staggered arrangement in accordance with Figure 11a dimensions (Figure 12a dimensions may be specified when a larger termination compartment for greater working space is desired) of IEEE Std C57.12.34™-2009 standard. Note: Bushings shall not exceed existing pad-mount bushing heights such that existing cables can be reused. Refer to drawings.

OVERCURRENT PROTECTION

The high-voltage overcurrent protection scheme provided with the transformer shall be an externally removable loadbreak expulsion Bay-O-Net fuse assembly with a flapper valve to minimize oil spillage. The bayonet fuses shall be in series with ELSP under-oil partial-range current-limiting back-up fuses with an interrupting rating of 50,000 A. (Re: Catalog Data CA132015EN, CA132009EN, CA132010EN, CA132012EN, CA132011EN, CA132007EN, and CA132013EN)

OVERVOLTAGE PROTECTION

The overvoltage protection scheme provided with the transformer shall protect the high-voltage or low voltage winding. Externally mounted, Distribution Class M.O.V.E. Dead-front elbow arresters shall be supplied. (Re: Catalog Data 235-65.)

LABELING

A temporary bar code label shall be attached to the exterior of the transformer in accordance with IEEE Std C57.12.34™-2009 standard.

FINISH PERFORMANCE REQUIREMENTS

The tank coating shall meet all requirements in IEEE Std C57.12.28™-2014 standard including:

- Salt Spray
- Crosshatch adhesion
- Humidity
- Impact
- Oil resistance
- Ultraviolet accelerated weathering
- Abrasion resistance – taber abraser

The enclosure integrity of the tank and cabinet shall meet the requirements for tamper resistance set forth in IEEE Std C57.12.28™-2014 standard including but not limited to the pry test, pull test, and wire probe test.

PRODUCTION TESTING

All units shall be tested for the following:

- No-Load (85 °C or 20 °C) losses at rated current
- Total (85 °C) losses at rated current
- Percent Impedance (85 °C) at rated current
- Excitation current (100% voltage) test
- Winding resistance measurement tests
- Ratio tests using all tap settings
- Polarity and phase relation tests
- Induced potential tests
- Full wave and reduced wave impulse test

Transformers shall conform to efficiency levels for liquid immersed distribution transformers, as specified in the Department of Energy ruling “10 CFR Part 431 Energy Conservation Program: Energy Conservation Standards for Distribution Transformers; Final Rule; April 18, 2013.” Manufacturer shall comply with the intent of all regulations set forth in noted ruling.

In addition, the manufacturer shall provide certification upon request for all design and other tests listed in IEEE Std C57.12.00™-2010 standard, including verification that the design has passed short circuit criteria per IEEE Std C57.12.00™-2010 standard and IEEE Std C57.12.90™-2010 standard.

In the event of proposal bid evaluated with guaranteed losses due to a loss evaluation (see section 10.0), manufacturer shall conform to guaranteed average losses as specified in IEEE Std C57.12.00™-2010 standard. The no-load losses of a transformer shall not exceed the specified no-load losses by more than 10%, and the total losses of a transformer shall not exceed the specified total losses by more than 6%.

ACCESSORIES

The following accessories and options shall be provided:

Metal drip shield (when bayonets specified)
Danger high voltage warning signs
Non-PCB decal
Touch-up paint

SERVICE

The manufacturer of the transformer shall have regional service centers located within two (2) hours flight time of all contiguous 48 states. Service personnel shall be factory trained in commissioning and routine service of quoted transformers.

APPROVED MANUFACTURERS

Eaton — Waukesha WI

Substitutions: See Equipment Substitutions in Section 26 00 00.

PART 3 - EXECUTION

PAINTING

All painting shall be done according to the Finishes Section of these specifications.

Touchup scratched or marred surfaces with paint furnished by the transformer manufacturer specifically for the purpose.

GROUNDING

Transformers shall be grounded in strict compliance with the NEC Article 250.

TESTS

Contractor shall test for shorts and proper grounding before energizing.

END OF SECTION

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SECTION 26 24 13 - LOW VOLTAGE SWITCHGEAR

PART 1 - GENERAL

SUMMARY

Scope: Provide labor, material, equipment, related services, and supervision required, including, but not limited to, manufacturing, fabrication, configuration and installation for low voltage switchboards (also identified as SWBDs) as required for the complete performance of the Work, as shown on the Drawings, as specified herein.

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

Applicable general requirements for electrical Work specified within Division 26 Specification Sections apply to this Section.

REFERENCE STANDARDS

ANSI Z535.4 - American National Standard for Product Safety Signs and Labels.
FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service.
ISO 9001 - Quality Management Systems — Requirements.
ISO 14001 - Environmental Management Systems — Requirements with Guidance for Use.
NEMA KS 1 - Heavy Duty Enclosed and Dead-Front Switches (600 Volts Maximum).
NEMA PB 2 - Deadfront Distribution Switchboards.
NEMA PB 2.1 - General Instructions for Proper Handling, Installation, Operation, and Maintenance of Deadfront Distribution Switchboards Rated 600 Volts or Less.
NETA ATS - Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems.
NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
NFPA 70B - Recommended Practice for Electrical Equipment Maintenance; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
NFPA 70E - Standard for Electrical Safety in the Workplace.
UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
UL 98 - Enclosed and Dead-Front Switches; Current Edition, Including All Revisions.
UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.
UL 891 - Switchboards; Current Edition, Including All Revisions.
UL 1053 - Ground-Fault Sensing and Relaying Equipment; Current Edition, Including All Revisions.
UL 1066 - Low-Voltage AC and DC Power Circuit Breakers Used in Enclosures; Current Edition, Including All Revisions.

SUBMITTALS

Provide sufficient information to determine compliance with Contract Documents. Identify submittal data with specific equipment tags and/or service descriptions to which they pertain. Identify specific model numbers, options, and features of equipment proposed.

Indicate deviations from Contract Documents with reference to corresponding drawing or specification number and written justification for deviation.

Product Data: Provide manufacturer's standard catalog pages and data sheets for switchboards, enclosures, overcurrent protective devices, components, and accessories.

Shop Drawings: Indicate dimensions, voltage, bus ampacities, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, instruments, features, and accessories.

Include dimensioned plan and elevation views of switchboards; indicate dimensions, weights, shipping splits, and required clearances.
Include single-line diagram.
Include proposed mimic bus arrangement.

Functional Demonstration Testing Report: Document test results, including assumptions, conditions, allowances, and corrections made.

Manufacturer's qualification statement.

Operation and Maintenance Data:

Provide detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
Include manufacturer, supplier, support, and repair center contact information.
Include manufacturer’s standard operation and maintenance data assembled for each size and type of equipment furnished.
Include contact information for parts stocking location closest to Owner.
Identify critical spare parts associated with long lead times and/or those critical to unit operation.
Identify maintenance spare parts required to regularly perform scheduled equipment maintenance including, but not limited to, consumable parts required to be exchanged during scheduled maintenance periods.
Digital Record Keeping:
Provide maintenance logbook application/website available on PC/mobile device to assist in compliance with NFPA 70B.
Include access to manufacturer's standard documentation, equipment serial number, as-built drawings, assembly and testing results, device settings, and spare parts list.
Provide password-protected access to Owner.
Provide access via scannable QR code on front face of equipment.

Executed warranty.

Project Record Documents:

Construction, installation, schematic, and wiring diagrams updated to as-installed and commissioned state.

Configured settings/parameters for adjustable components updated to as-installed and commissioned state, noted if different from factory default.

Maintenance Materials: Furnish the following for Owner's use in maintenance of project:

Spare Parts: For each type and size of unit installed.

Provide minimum spare parts recommended by manufacturer.
Touch-up paint for finishes.
Package and mark spare parts for long-term storage. Provide separate anti-static containers for printed circuit boards.

Tools: Manufacturer-specific special tools required to install, remove, test, and maintain switchboard components.

Accessory Set: Tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.

QUALITY ASSURANCE

Comply with the following:
NFPA 70.
Requirements of local authorities having jurisdiction.
Applicable local codes.

Manufacturer Qualifications:

Firm engaged in manufacture of specified products of types and sizes required, and whose products have been in satisfactory use in similar service for minimum of 20 years.

Certified in accordance with ISO 9001 with applicable quality assurance system regularly reviewed and audited by third-party registrar. Develop and control manufacturing, inspection, and testing procedures under guidelines of quality assurance system.

Service, repair, and technical support services available 24 hours per day, 7 days per week from manufacturer or their representative.

Certified in accordance with ISO 14001, with product environmental profiles (PEPs) for specified products.

DELIVERY, STORAGE, AND HANDLING

Prior to delivery to project site, verify suitable storage space is available to store materials in well-ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity, and corrosive atmospheres.

Protect materials during delivery and storage and maintain within manufacturer's written storage requirements. At minimum, store indoors in clean, dry space with uniform temperature to prevent condensation and protect electronics from potential damage from electrical and magnetic energy.

Deliver materials to project site in supplier's or manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and equipment tag number or service name as identified in Contract Documents.

Inspect products and report concealed damage or violation of delivery, storage, and handling requirements to Engineer.

FIELD CONDITIONS

Maintain field conditions within manufacturer's required service conditions during and after installation.

WARRANTY

Manufacturer Warranty: Provide manufacturer warranty for defects in material and workmanship for 12 months from date of commissioning or 18 months from date of shipment, whichever comes first. Complete forms in Owner's name and register with manufacturer.

PART 2 - PRODUCTS

MANUFACTURERS

Basis of Design: Schneider Electric; Square D QED-2.

Substitutions: See Section 260000 - Product Requirements

Source Limitations: Furnish products produced by same manufacturer as other electrical distribution equipment for project.

LOW-VOLTAGE SWITCHBOARDS

Switchboard Ratings/Configurations: As indicated on drawings.

Switchboard Rating/Configuration:

Source: Single main
Main Breaker: Fixed
Nominal System Voltage: 480Y/277 V, 3-phase, 4-wire, 60 Hz
System Ampacity: 1,600 A
Short Circuit Current Rating: 65 kA
Available Access: For front and rear
Service Entrance Rating: Required
Incoming Connection Type: Cable
Incoming Mains Location: Through top
Incoming Side: Left side of lineup
See drawings.

Switchboard Assemblies:

Comply with NEMA PB 2; list and label as complying with UL 891.
Provide front and rear alignment of adjacent sections.
Provide barriers between sections.

Ground Fault Protection: List and label as complying with UL 1053.

Cable Terminations for Incoming Conductors:

Provide lugs in quantity and size required for conductors indicated on drawings.

Lug Type: Copper mechanical lugs, suitable for terminating copper conductors only, unless otherwise indicated; rate for 167 degrees F (75 degrees C).

Bussing:

Bus Density Rating: Standard, in accordance with UL 891 temperature rise requirements

Bus Material: Hard-drawn, silver-plated copper of 98 percent conductivity

Plating: Apply to bus surfaces except cut edges. Plating on contact surfaces only is not permitted.

Phase and Neutral Horizontal Bus: Ampacity equal to or greater than switchboard system rating. Tapered bus is not permitted.

Group-Mounted Feeder Vertical Bus Stack:

Provide capability to mount feeder breakers with different frame sizes/poles across from one another on bus stack.
Design to remove nonconducting surface films during circuit breaker installation by wiping action of circuit breaker jaws.
Design in conjunction with circuit breaker jaws to create blow-on forces under fault conditions.
Bolted connections for group-mounted feeder breakers are not permitted.

Ground Bus:

Size in accordance with NFPA 70 and UL 891.
Bus Material: Hard-drawn copper of 98 percent conductivity.
Equip with pressure connectors for feeder and branch circuit equipment grounding conductors.

Enclosures:

Construction: Steel.

UL 50E Rating, Unless Otherwise Indicated:

Indoor Locations with Fire Sprinkler Protection: Type 1 with drip hood.

Front Covers: Removable with single tool.

Doors: Hinged with removable hinge pins.

Finish: Manufacturer's standard paint color over rust-inhibiting primer on treated metal surface.

Future Provisions:

Future Devices: Equip compartments with mounting brackets, supports, bus connections, and appurtenances at full rating of circuit breaker compartment.

Markings and Labeling:

Provide identification and warning labels/nameplates exterior to equipment resistant to weather, UV, and intended installation environment.

Provide warning labels/nameplates complying with ANSI Z535.4 at access locations to advise personnel of possible hazards in accordance with listing, NFPA 70, NFPA 70E, and other applicable standards.

Provide scannable QR code on front face of equipment for access to maintenance logbook application/website available on PC/mobile device.

Line-Side Isolation:

Provide circuit breaker section with energy-reducing, line-side isolation to reduce line-side incident energy exposure to less than 4.4 Btu/sq ft (1.2 cal/sq cm) at 18 inches (460 mm), as verified by UL RP 2986.

Independent of design, current duration, and trip level of upstream protective device.

Rated for full voltage and interrupting rating marked on equipment.

Provide passive system that continuously protects from effects of arc flash incidents without requiring arc flash relay system, power (e.g., control power), special commissioning, testing, or operator intervention.

Reusable for multiple arc flash events.

Do not use means for reducing arc energy that cause additional system level stresses, including bolted fault short circuit.

Remote Continuous Thermal Monitoring: Provide thermal monitoring of each line-side conductor of energy-reducing, line-side isolation section to eliminate need for exposure to energized line-side conductors for thermal scans.

Provide indication of arc flash incident on line-side conductors.

Products:

Basis of Design: Schneider Electric; ArcBlok.
Substitutions: See Section 260000 - Product Requirements

Maintenance Mode Switches:

Description: Local, lockable switch with blue status indicator light that permits selection of maintenance mode with alternate electronic trip unit settings for reduced fault clearing time in accordance with NFPA 70.

Provide where indicated on drawings.

Switch Type: Provide energy reduction maintenance settings (ERMS) switches or maintenance mode settings (MMS) switches as indicated.

ERMS Switches: Clearing time of less than 50 milliseconds when activated.
MMS Switches: Clearing time of less than 80 milliseconds when activated.

Power Metering:

Factory installed, integrated within switchboard.

Applications:

Low-Voltage Mains: Power quality meter

Power Quality Meters:

Capable of monitoring for network management, energy cost allocation, power quality analysis, asset management, operational efficiency, and compliance reporting.

Products:

Basis of Design: Schneider Electric; PowerLogic PM8244 Meter.
Substitutions: See Section 260000 - Product Requirements.

OVERCURRENT PROTECTIVE DEVICES

Circuit Breakers:

Interrupting Capacity: As required to provide short circuit current rating indicated.

Molded Case Circuit Breakers (MCCBs):

Comply with FS W-C-375; listed and labeled as complying with UL 489.

Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.

Circuit Breaker Type:

Provide thermal magnetic circuit breakers for circuit breaker frame sizes less than 1200 amperes.

Provide electronic trip circuit breakers for circuit breaker frame sizes 1200 amperes and above.

Electronic Trip Units:

Microprocessor based, with circuit breaker status display and LED trip indicators.

Where indicated on drawings, provide electronic trip units with field-adjustable long-time, short-time, instantaneous, and ground-fault protection settings.

Provide the following where indicated or required:

Ground Fault Protection: Integral to circuit breaker with adjustable pickup and time delay settings, push to test feature, and ground fault indicator.

PART 3 - EXECUTION

EXAMINATION

Examine equipment exterior and interior for damage, including but not limited to, structure, moisture, and mildew.

Examine for conditions detrimental to completion of work, including:

Verify concrete pads are level and free of irregularities.

Verify installation space is enclosed and weatherproof.

Verify wet work located in or in close proximity to switchboard installation location is completed and dry.

INSTALLATION

Install equipment in accordance with manufacturer’s written instructions.

Install switchboards in accordance with NECA 1, NECA 400, and NEMA PB 2.1.

Unless otherwise indicated, install and anchor switchboards on raised concrete pad.

Set field-adjustable circuit breaker tripping function settings as directed by Engineer.

FIELD QUALITY CONTROL

Manufacturer Services: Provide services of manufacturer's field representative to perform functional testing, commissioning, and first parameter adjusting.

Include necessary material, equipment, labor, and technical supervision.

Replace damaged or malfunctioning equipment and report discrepancies or installation issues.

Identify switchboards with label indicating inspection/testing agency and date of service.

Start-up services must be completed on weekend during scheduled outage used for switchgear replacement.

Operational Readiness Testing:

Inspect and test equipment and associated systems for conformance to Contract Documents, including equipment manufacturer’s recommendations, and readiness for operation.

Visually inspect for physical damage and proper installation.

Perform tests in accordance with manufacturer's instructions.

Perform tests to verify compliance with Contract Documents.

Perform tests to verify equipment is ready for operation.

Touch-up paint chips and scratches with manufacturer-supplied paint.

Test insulation resistance for each switchboard bus, component, connecting supply, feeder, and control circuit.

Measure, using high potential testing, insulation resistance of each bus structure phase-to-phase and phase-to-ground for one minute each, at minimum test voltage of 1,000 VDC.
Comply with manufacturer's documented specific testing procedures.
Minimum Insulation Resistance: 1 megohm.

Perform each electrical test and visual/mechanical inspection listed in NETA ATS as applicable. Certify compliance with test parameters.
Switchboards: See NETA ATS Section 7.1.
Circuit Breakers: See NETA ATS Section 7.6.
Meters: See NETA ATS Section 7.11.
Ground Fault Protection Systems: See NETA ATS Section 7.14.

Correct deficiencies and replace damaged or defective switchboards or associated components.

CLOSEOUT ACTIVITIES

Training:

Train Owner's personnel on operation and maintenance of system.
Provide not less than one session with four hours of classroom and hands-on training.
Training Reference: Use submitted operations and maintenance manuals.
Instructor: Factory-trained manufacturer's representative.
Location: Project site.

Provide sufficient time and detail in each session to cover the following at minimum:

- Operation theory.
- Major equipment components.
- Equipment operation.
- Equipment configurations.
- Maintenance, troubleshooting, and repair.
- Component-level parts replacement.

PROTECTION

Protect installed switchboards from subsequent construction operations.

If switchboard ships and arrives to site ahead of scheduled outage, switchboard shall not be stored outdoors. Coordinate with owner for storing switchboard ahead of install date.

END OF SECTION

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SECTION 26 26 00 – POWER DISTRIBUTION UNIT

PART 1 - GENERAL

SCOPE

The Contractor shall furnish and install, where indicated, a free-standing, dead-front type power distribution units, utilizing group mounted circuit protective devices, integrated panelboards, and other equipment as specified herein, and as shown on the contract drawings.

REFERENCES

The low voltage power distribution units and all components shall be designed, manufactured and tested in accordance with the latest applicable following standards:

Underwriters Laboratories Standard, UL 60950-1
FCC Part 15 EMI Emission Limits for Class A Computing Devices (47 CFR 0-19)
National Electric Code (NEC)
ISO 9001
American National Standards Institute (ANSI)
National Electrical Manufacturers Association (NEMA)
National Fire Protection Association (NFPA)
Federal Information Processing Standards (FIPS)

SUBMITTALS

The following information shall be submitted to the Engineer:

- Front view elevation
- Floor plan
- Top view
- Single line
- Nameplate schedule
- Component list
- Conduit entry/exit locations
- Assembly ratings including:
  - Input disconnect and feeders short-circuit rating
  - Main breaker ratings
  - Voltage
  - Continuous current
- Major component ratings including:
  - Voltage
  - Continuous current
  - Interrupting ratings
- Panelboard branch breaker schedules and ratings
- Cable terminal sizes
- Product data sheets

QUALIFICATIONS

The manufacturer of the assembly shall be the manufacturer of the circuit protective devices within the assembly.

The PDU manufacturer shall have ISO 9001 certification for engineering/R&D, manufacturing facilities and service organization.

The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of ten (10) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

Spare Parts Support: Parts supplies shall be located in the field to provide 80% of all emergency needs. The factory shall serve as the central stocking facility where a dedicated supply of all parts shall be available within 24 hours.

ENVIRONMENTAL AND SAFETY REQUIREMENTS

The Power Distribution Unit shall be designed for operation in the following conditions:

Operating temperature: 0 degrees C to +40 degrees C
Storage: -40 degrees C to +60 degrees C
Relative humidity: 10% to 95% non-condensing
Operating Altitude: Up to 1000m (3280 ft) non-derating

REGULATORY REQUIREMENTS

The power distribution unit shall be UL listed.

WARRANTY

All components of the PDU system shall be covered by a standard one-year factory warranty and service protection package.

PART 2 - PRODUCTS

MANUFACTURERS

Basis of Design: Eaton Corporation PowerPak – Free-Standing Remote Power Panel

Substitutions: See Section 260000 - Product Requirements

The listing of specific manufacturers above does not imply acceptance of their products that do not meet the specified ratings, features and functions. Manufacturers listed above are not relieved from meeting these specifications in their entirety. Products in compliance with the specification and manufactured by others not named will be considered only if pre-approved by the Engineer ten (10) days prior to bid date.

RATINGS

The power distribution unit shall have a continuous rating of 400A.

The unit voltage shall be 208 VAC, three-phase, 4-wire plus ground, 60 Hz.

The unit shall have (1) main breaker and (2) 42-space MLO panelboards.

CONSTRUCTION

The Power Distribution Unit enclosure shall be free-standing and be designed to allow all routine service. The top of the Power Distribution Unit shall prevent entry of foreign material from above per UL 60950 guidelines.

The cabinet shall be NEMA 1 design constructed of heavy gauge sheet metal.

The cabinet shall have provision for bottom cable entry to facilitate all load and incoming cables.

The cabinet shall have hinged side and rear panels that are removable for access.

The inside of the cabinet shall have individual hinged trims over the panelboard(s) that are easily removable to facilitate installation.

The cabinet shall have full front hinged door with Lexan viewing window and flush mounted door handle with integral keyed locks.

INPUT MAIN CIRCUIT BREAKER

The Power Distribution Unit shall include an input main circuit breaker to provide over-current protection and a means of disconnecting power to the unit. The system's input main circuit breaker shall be a 3-pole circuit breaker sized for 100% of the Power Distribution Unit full load current rating and rated for 240 VAC. Main breaker shall have electronic trip unit with adjustable LSI settings. The system's input main circuit breaker shall have a minimum interrupting rating of 65,000 symmetrical amps at 208 VAC.

Input circuit breaker shall be capable of receiving two (2) parallel feeders. See drawings for parallel feeder sizes.

The system's input main circuit breaker shall contain a 24 VDC shunt trip mechanism for use with remote Emergency Power Off (EPO) pushbuttons.

OUTPUT DISTRIBUTION PANELBOARDS

The Power Distribution Unit shall contain 2 42-pole, 240 VAC, three (3) phase distribution panelboards with a short circuit rating of 65,000 RMS symmetrical amperes.

Each distribution panelboard shall employ copper bus bars and shall be capable of accepting one-pole, two-pole, and three-pole circuit breakers rated up to 100 amperes. Each distribution panelboard shall only accept bolt-on branch circuit breakers.

To facilitate field connection of loads, each distribution panelboard shall feature two (2) 21-position neutral bus assemblies and two (2) 21-position ground bus kits, one on each side of the panelboard(s), to provide sufficient output ground and neutral termination space. The ground and neutral bus kits shall be mounted parallel to its distribution panelboard to facilitate optimum spacing for ease of installation and expansion purposes. Systems with bus kits mounted below the distribution panelboards are not permitted.

Branch Circuit Breakers

Each load shall be protected by an individual branch circuit breaker. Each branch circuit breaker shall provide over-current protection and shall have three (3) toggle positions: “ON”, “OFF”, and “TRIPPED”. Branch circuit breakers shall be bolt-on and have a minimum interrupting capacity of 10,000 RMS symmetrical amperes sized in accordance with the National Electrical Code.

NAMEPLATES

Nameplates, mounted on the assembly, shall be furnished for main circuits as indicated on the drawings. Furnish master nameplate giving PDU designation, voltage ampere rating, manufacturer’s name, general order number, item number, and serial number.

FINISH

The Power Distribution Unit exterior panels shall be painted black having a fine texture finish.

SYSTEM MONITORING

The PDU shall have color touchscreen LCD panel, mounted on front door, for displaying parameters locally, with remote monitoring capability. Local parameters shall include overall current and voltage.

PART 3 - EXECUTION

FACTORY TESTING

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

The manufacturer shall provide certified copies of factory test reports.

MANUFACTURER'S CERTIFICATION

A certified test report of all standard production tests shall be available to the Engineer upon request.

TRAINING

The Contractor shall provide a training session for up to five (5) owner's representatives for 1 normal workday at project site location.

A manufacturer's qualified representative shall conduct the training session. The training program shall consist of instruction on operation of the assembly, circuit breakers, and major components within the assembly.

INSTALLATION

The Contractors shall install all equipment per the manufacturer's instructions, contract drawings and National Electrical Code.

FIELD ADJUSTMENTS

The Contractor shall perform field adjustments of the protective devices as required to place the equipment in final operating condition. The settings shall be in accordance with the approved protective device coordination study.

Necessary field settings of devices and adjustments and minor modifications to equipment to accomplish conformance with an approved protective device coordination study shall be carried out by the Contractor at no additional cost to the owner.

END OF SECTION